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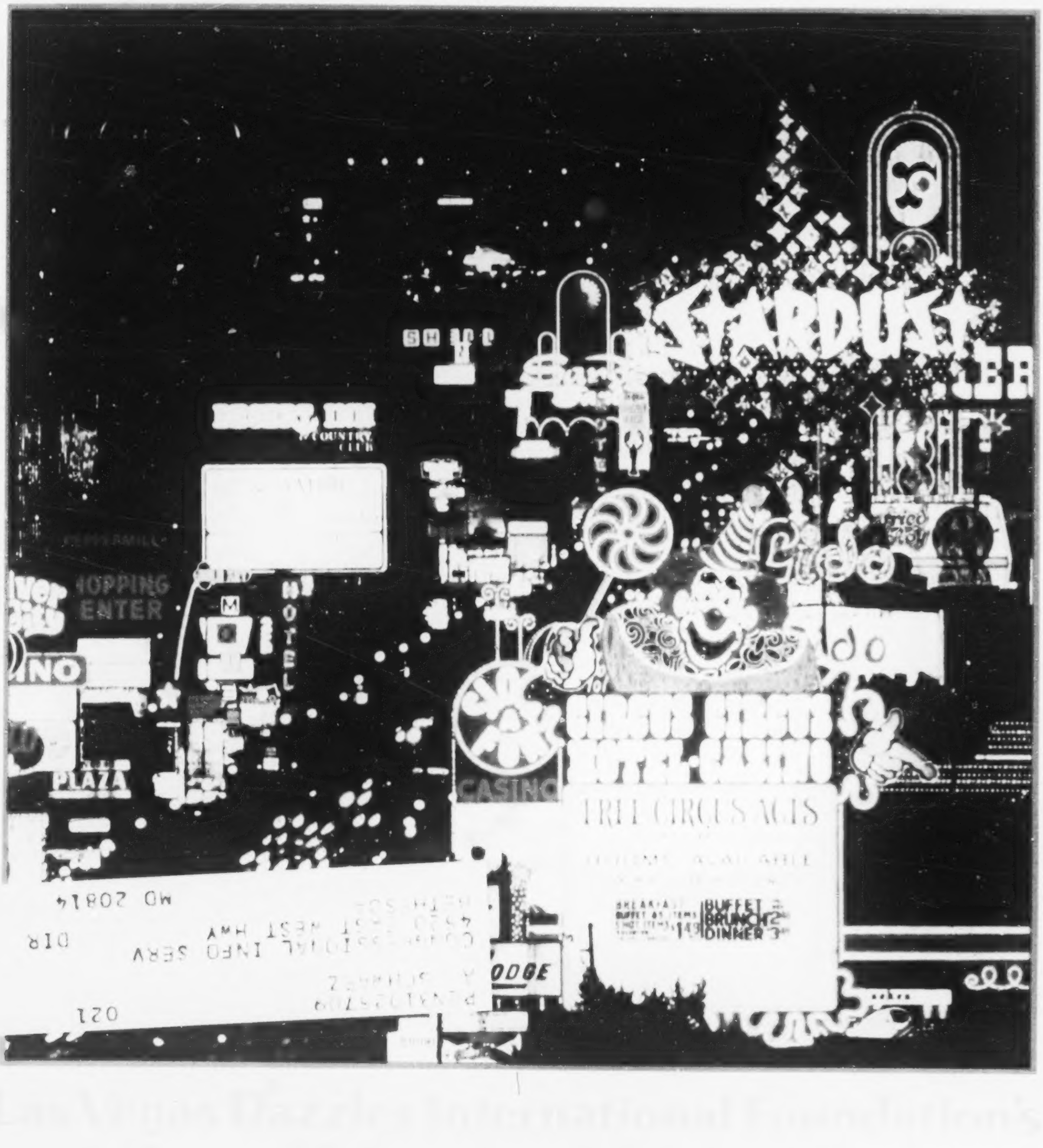
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The State Employees Pension [illegible] Investing in Union-Built Property

Pension World

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Cover: **Las Vegas glitters by night. Photo courtesy of Las Vegas News Bureau.**

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Emerging Trends 1987: Real estate investment outlook

Despite the doomsayers, less than four percent of America's investment grade real estate is in trouble.

by **LEANNE LACHMAN**
President
and **RICHARD KATELEY**
Executive Vice President
Real Estate Research Corporation
Chicago, Ill.

Pension World is pleased to present an excerpt from the forthcoming report *Emerging Trends in Real Estate: 1987,* an annual publication of Real Estate Research Corporation, Chicago. This material is derived from Chapter 2, "Real Estate Investment Outlook."

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The vast majority of investor-owned real estate will produce adequate returns in 1987. Times will be tough for undercapitalized developers and investors with buildings that are leasing slowly, for the 200 or 250 severely troubled savings and loans, for highly leveraged syndications with vacancy problems and for deep-tax-shelter syndications that still need several more years of limited partner contributions.

These problems notwithstanding, less than four percent of America's investment-grade real estate is in trouble (i.e., behind in loan payments). The rest is perking along, providing shelter for workers, travelers, and residents and satisfying the owners' investment requirements.

Yields on investment real estate have dropped over the last 18 to 24 months, as have interest rates and bond yields. Table 1 presents the comparative yields for real estate investment trusts (REITs), pooled real estate funds for institutional investors, indexed government and corporate bonds and the S&P 500 through year-end 1985.

Although the two forms of real estate investment did well until last year, outperforming stocks and bonds in average total return from 1977-84, they did not compare at all favorably in 1985. The '86 comparison with bonds will be somewhat more positive, but the stock market has clearly generated superior returns this year.

Financial planners advocate portfolio diversification into real estate to take advantage of the countercyclical relationship between stock and real property returns. From 1977-79, as reflected in Table 1, pooled real estate funds produced an average annual return of 16.8 percent while the S&P 500 yielded only 6.3 percent a year. Now the situation is reversed.

Real estate's inflation protection is not particularly relevant when the Consumer Price Index is only going up 2.5 to 4 percent a year. Traditionally, an investor in good quality properties could expect a cash return of 8-11 percent, as reflected in the "Income Return" columns for REITs and pooled real estate funds. Cash returns have dropped, however, with today's extensive office oversupply. Even established, well-leased office buildings are forced to offer deep rent concessions to hold their tenants. Offices account for about half the properties in most pooled funds, so average cash yields are down—and will remain so for two to three years while the excess inventory is absorbed.

Investors are concerned about the negative effects that a serious recession would have on the overbuilt property market. If tenants' space usage began shrinking instead of expanding and if bankruptcies rose significantly, many more properties would become troubled. (Imagine Houston and Oklahoma City replicated many times over!) Two-thirds

Table 1 Comparative Returns on Real Estate,

	REITs			Pooled real estate funds		
Year	Unrealized appreciation	Income return	Total return	Unrealized appreciation	Income return	Total return
1977	10.1%	8.0%	18.1%	3.2%	8.8%	12.0%
1978	−8.5	8.4	−0.1	8.0	9.6	17.6
1979	18.0	10.7	28.7	11.2	9.6	20.8
1980	10.5	9.7	20.2	8.9	9.3	18.2
1981	−0.2	9.5	9.3	7.8	9.0	16.8
1982	17.1	10.0	27.1	0.6	8.5	9.1
1983	14.9	9.6	24.5	5.7	8.4	14.1
1984	3.9	9.2	13.1	5.4	8.4	13.8
1985	−4.4	9.7	5.3	2.4	7.7	10.1
Arithmetic mean	6.8	9.4	16.2	5.9	8.8	14.7

Sources: *REIT Fact Book*, The National Association of Real Estate Investment Trusts, Inc.; *Real Estate Profiles*, Evaluation Associates, Westport, Connecticut, 1986; Shearson Lehman Brothers; Standard & Poor's; U.S. Department of Labor, Bureau of Labor Statistics; Real Estate Research Corporation.

of the *Emerging Trends* interviewees do not anticipate a national recession in 1987; yet all recognize the economy's poor performance and acknowledge that it could worsen.

This concern is reflected in the current four-point differential between the average yields on Moody's Aa Utilities and the median yields expected from top investment-grade real estate being acquired for institutions. In the past, the yield spread between those two investment alternatives has commonly been closer.

'87 price trends

Capitalization rates (or going-in annual rates of return) remain low for investment real estate. The predominant focus here is on office, retail, and industrial properties; the situation for apartments and hotels is muddier and precludes sweeping generalizations. For the three primary institutional land uses, prices are holding up—largely because the amount of money available for investment still exceeds the supply of good quality product. We do not anticipate a material change in this situation in 1987.

In fact, RERC's crystal ball shows considerable stability in real estate prices next year. We see values holding up for large institutional holdings and for smaller income properties. In the middle—where tax-oriented syndicators and aggressive thrift lenders have been most active—there will probably be price declines of 5 to 20 percent. But even in that category, occupied retail and industrial property prices are likely to hold up well.

RERC's quarterly survey of investment yields has looked at national market properties and good quality investment properties. This is where cap rates have stayed down—and 72 percent of the interviewees expect investors to continue accepting lower yields.

Most institutional investors are committed to real estate for the long term and believe that good properties will appreciate over time. They are prepared to ride out cycles of oversupply in order to be well positioned when markets tighten and when inflation returns. As will be discussed shortly, RERC expects the flow of funds available for institutional real estate investments to remain strong enough in 1987 to keep prices up, with the possible exception of hotels.

In the press and in conversations among real estate professionals, the current focus is on the horrendous office and hotel overbuilding. Two mitigating factors are largely ignored: first, on a national basis, the retail and industrial markets are in good balance; and second, most well-located and established office buildings and hotels in the country are producing steady, if low, cash flows. In 1985, industrial properties in institutional portfolios covered by the Frank Russell Company Index produced an 11.8 percent return. Retail properties were almost as strong at 11.5 percent. Even the 8.6 percent return for offices was almost five points above the inflation rate. Witnessing this kind of performance, institutional investors—both domestic and foreign—are content to allocate a modest proportion of their diversified portfolios to real estate. Furthermore, RERC's projection is that commingled funds will yield 9 to 10 percent per year through the rest of the '80s.

> *"Most institutional investors are committed to real estate for the long term and believe that good properties will appreciate over time."*

We are not so sanguine about the country's large supply of average and below-average investment properties. Some will perform well for their owners, but highly leveraged buildings with substantial vacancies will pose problems for developers, investors, lenders and, in the worst cases, even tenants.

This is the property category in which most foreclosures are occurring—and where defaults will accelerate in '87. Because tax-oriented syndicators have paid premium prices for apartment buildings, non-CBD hotels and speculative office buildings in the past, prices in this category are declining. Again, this is not happening across the board, nor will it, but a lot of investors and lenders will see their asset values drop.

In the broad category of small income properties—from six-unit apartment buildings to 20,000-square-foot industrial buildings to 7-11s—prices are likely to hold up fairly well. As is always the case, some owners are overleveraged and will lose their buildings; but they are more than matched by the huge number of owners who carry no debt whatsoever on their properties. The typical small property owner will do just fine in 1987.

Three-quarters of all investment real estate represents properties built, financed, owned and rented by small companies and individuals. Although the industry is not necessarily dominated by "Ma and

Bonds and Stocks: 1977-1985

Shearson/Lehman Government/ Corporate Bond Index			S&P 500 stocks			
Unrealized appreciation	Income return	Total return	Unrealized appreciation	Income return	Total return	CPI
– 4.3%	7.3%	3.0%	– 8.4%	4.6%	– 3.8%	6.8%
– 6.5	7.7	1.2	3.4	5.3	8.7	9.0
– 6.2	8.5	2.3	8.4	5.5	13.9	13.3
– 6.9	10.0	3.1	26.4	5.3	31.7	12.4
– 4.8	12.1	7.3	– 8.2	5.2	– 3.0	8.9
16.1	15.0	31.1	11.9	5.8	17.7	3.9
– 3.3	11.3	8.0	21.2	4.4	25.6	3.8
2.5	12.5	15.0	– 0.3	4.6	4.3	4.0
9.1	12.2	21.3	19.2	4.2	23.4	3.8
– 0.5	10.7	10.3	8.2	5.0	13.2	7.3

Pa'' operations, it is still local entrepreneurs, builder/developers and financial institutions that account for the bulk of commercial property. *Builder Magazine's* most recent survey (1985) indicates, for example, that the 100 largest homebuilders account for only 11 percent of the single-family market.

A similar pattern emerges in retail. Most shopping centers (65 percent) are under 100,000 square feet. Those with less than 200,000 square feet constitute about half the gross leasable area (GLA) in the nation, compared with 12 percent for centers over a million square feet. In the multifamily sector, six out of 10 apartment complexes contain fewer than 10 units. Only 14 percent of existing apartment units are in buildings that have more than 100 units.

Sources of equity

RERC's prediction that overall real estate prices will hold up in 1987 is based on the assumption that more than enough equity and debt funding will be available. All signs are that this presumption is reasonable.

Real estate equity comes from four general sources: domestic pension funds; foreign institutions and individuals; Americans' personal retirement accounts—IRAs and 401(k) and Keogh plans; and individual direct investors. Although the volume of funds from each source varies from year to year, the overall flow has been fairly steady throughout the 1980s.

In 1987, pension investment in real estate is likely to remain constant. IRA and other individual retirement funds will drop somewhat. Individual investors will account for far less new equity than in their peak year of 1985; however, lower funding from this source will largely be balanced by foreign investors, who are once again buying heavily in the U.S. In the aggregate, ample equity will be available for the reduced level of real estate activity in '87.

> *''Three-quarters of all investment real estate represents properties built, financed, owned and rented by small companies and individuals.''*

Considering that new commercial construction volumes will be down significantly and, therefore, that equity investment will be directed primarily toward existing property acquisitions, we expect a continuation of the ''more money than product'' syndrome. Hence, prices will stay up.

• **Pension funds** will invest in real estate just as heavily next year as they have in 1986, according to 81 percent of the *Emerging Trends* interviewees. This is a much stronger prediction than last year's, when only 67 percent of RERC's respondents anticipated a continued heavy flow of pension investment.

The pension funds' real estate advisors and investment managers agree with our interviewees about new funding in '87. Corporate pension fund investment in real estate has slowed somewhat in 1986, and that pattern is expected to hold for '87 as well. However, an aggressive move into real estate by public pension funds is more than compensating for the shortfall on the private side.

A number of factors explain the somewhat lower flow of new equity from private pension funds:

1. The most obvious is plan terminations, which are triggering withdrawals from commingled funds.

2. Many corporate pension plans are now overfunded and consequently have no new cash to invest.

3. A number of the very large pension funds have reached their target allocations to real estate and are not inclined to increase them in today's market.

Among the large pension funds most active in real estate are the ''baby Bells,'' which are expected to invest heavily in '87 and '88 as they work toward a 15 to 20 percent allocation to real estate. Many smaller corporate funds are also bringing new equity to real estate, not yet having reached a significant threshold of diversification.

Of the limited number of private pension funds with over $3 billion in assets, about one-quarter now have real estate separate accounts—where they can exercise greater control, take more risk and anticipate higher returns. This pattern, though expected to spread, is not yet significant within the next tier of pension funds. Also, separate accounts are usually created with new dollar commitments to real estate; they aren't financed through withdrawals from commingled funds.

It is only since the early '80s that public pension funds have committed equity to real estate and in many states they are still precluded by statute from doing so. The New York State Retirement System, which has more than $30 billion in assets and has been an active mortgage lender for years, made its first equity real estate purchase about two years ago. The State of Wisconsin Investment Board has two percent of its $13.5 billion in real estate now, but its target allocation is 20 percent.

Pension advisors estimate that public funds have already adopted allocation plans that would commit an additional $15-20 billion to real estate. That translates into $4-5 billion annually.

RERC estimates that private and public pension funds had equity real estate investments of $59.8 billion by the end of 1985. This reflects an increase of $2.7 billion over the year-earlier number.

- **Foreign investors** have made much higher equity commitments to U.S. real estate in '86 than in the last three years. And 96 percent of the *Emerging Trends* interviewees believe that foreign investment will keep going up in '87. Last year, about half the respondents said they were seeing more interest in American real estate from abroad. In 1986, 61 percent report direct dealings with foreign investors—and three-fourths cite the Japanese.

As we emphasized last year, the Japanese are by far the most significant new overseas investors—and certainly the most talked about. Because their activities are so varied and their equity in U.S. real estate is growing geometrically, RERC has once again included a special summary (see accompanying sidebar) on Japanese real estate investment. Total Japanese equity commitment is unknown, but the net figure for '86 is probably between $2.5 and $3 billion. It is expected to double in '87. This volume of new money flowing into investment-grade real estate reinforces our conviction that prices will stay up.

The Japanese are by no means the only foreign investors in America, nor are they the biggest in aggregate holdings. Canadians are a major continuing force, particularly with BCE Development's acquisition of Daon and Oxford Properties and with Olympia and York's aggressive development and investment. The British are very active, being credited by the *New York Times* with owning $1 billion of investment real estate in Washington, D.C. alone. Then there are the Dutch, West Germans, Swiss, Australians, Indians, Middle Easterners and South and Central Americans.

On average over the last eight years, foreign investors have probably introduced $10 billion of new money to the U.S. real estate market annually. The 1987 number will be higher.

- **Individual retirement plans** have generated a lot of money for real estate over the last few years. It has been estimated by Robert A. Stanger & Co., for example, that up to half of the nearly $12 billion raised by public syndicators in 1985 came from IRAs, 401(k) plans and Keogh accounts. The average investment was reportedly $5,000. REITs have also attracted money from individual retirement accounts.

As individuals accumulate larger sums in their various retirement accounts—and become more informed about alternative investment vehicles—real estate's appeal grows. Like pension fund managers, individuals value the cash yields from income properties and recognize their implicit inflation protection.

The new tax law will dramatically reduce the amount of new money that will flow into individual retirement accounts. Nevertheless, there

Japanese Investment in U.S. Real Estate

Escalating Japanese investment in U.S. property is one of today's major real estate trends. Direct equity investment from Japan—over and above capital committed to manufacturing plants and equipment—will double in 1987, as shown below.

Estimated Japanese Direct Equity Investment

1985	$1.2 to $1.5 billion
1986	$2.5 to $3.0 billion
1987	$5.0 to $6.0 billion

Source: Real Estate Research Corporation

This nearly exponential growth means that Japanese investors are no longer tentatively testing the market: they are mainstream, steady participants in equity and debt finance, in new project lending and in construction. Underlying this surge are the following factors:

- Japan is awash in more investment capital than can be absorbed domestically, in part because the savings rate (15-20 percent of gross income) is so high, in part because of a worldwide favorable balance of payments and in part because of the underlying strength of the yen.
- Alternative yields are less attractive than the 8-10 percent expected of U.S. real estate. In Japan, property transfers infrequently, prices are exorbitant and returns are in the 2 to 4 percent range.
- The Ministry of Finance permits pension funds to invest 25 percent (formerly 10 percent) of their funds outside Japan. Officials are also authorizing second-tier insurance companies to invest in foreign real estate. Diversification is therefore a matter of government policy as well as private initiative.

Although still relatively small in number, a wider variety of Japanese players are now involved in American real estate:

Insurance companies. Of the 20 or so large ones, six are currently purchasing U.S. real estate and three or four others are approved by the Ministry of Finance. Insurance companies do joint ventures (typically 50/50) and solo purchases. They are conservative, risk averse, seek the highest quality product and have the greatest experience among the various players with U.S. markets and American partners.

Banks include trust banks and so-called city banks. They invest for their clients, who may be individuals as well as pension funds. Japanese construction lenders are aggressive in participations with American banks and in direct lending. They are outbidding money center banks by offering competitive rates on loans that don't require personal guarantees by developers.

Construction companies typically have not invested their own money, but that is changing and they are taking equity positions, as well as channeling capital from the banks and trading companies.

Japanese Investment (Continued)

These firms are doing some very large and very smart deals across the country. They operate as general contractor or joint general contractor and sub out most of the work to American companies. Like the banks, they are formidable competitors.

Trading companies, real estate companies, securities firms and **individual entrepreneurs,** along with the construction companies, are not regulated by Japanese authorities. They are involved in equity purchases, financing and development. Some make U.S. real estate available to individual Japanese investors. One such offering, marketed with the slogan "Let's Become Manhattan Landlords," reportedly sold shares worth $175 million in one day.

Emerging Trends interviewees who work with the Japanese report that their deals are no different than those with American partners. They favor the biggest cities on the coasts—New York, San Francisco, Boston, Los Angeles—followed by Washington, Philadelphia, Atlanta, and Chicago. Property preferences are skewed in favor of central-city highrises, including both hotels and office projects. Shopping centers and industrial/business parks are avoided, largely because they don't exist in Japan and investors don't understand how they work. Residential projects have appeal only in exceptional cases.

The Japanese choose people they know and trust as business partners and those relationships take time to develop. American institutions in on the ground floor (banks, insurance companies, investment bankers) will continue to be favored. They are also the ones with representative offices in Japan, so their share of the trade can be expected to expand.

RERC's experience with the Japanese suggests they don't yet fully understand the risks of U.S. real estate. Several factors contribute to this:

- Japanese observation of the industry has only been during the up cycle of development.
- It takes time to grasp the mobility of American tenants—and the costs associated with turnover. In Japan, tenants stay put.
- U.S. rents can go down as well as up, and land prices can do the same. This never happens in Japan.
- The speed and ease with which American markets become overbuilt—given the size of the country and the number of real estate players—is not fully appreciated.

As owners and lenders, Japanese investors will eventually come to grips with these issues and some of the romance of U.S. property may fade—but not before their stake in America grows. 1987 will see a big increase in that growth.

Source: RERC interviews.

will still be new savings to invest; the earnings from existing accounts will have to be reinvested; and some money will switch to real estate from money market and equity accounts. The large syndicators with good retail distribution affiliations can be expected to focus on individual retirement plan monies.

- **Individual investors** are the fourth major group that has generated a high volume of real estate equity over the last 10 to 15 years. This is where RERC expects a significant dropoff in 1987.

With the loss of real estate's tax shelter advantages and the widespread negative publicity about overbuilding and troubled real estate, smaller-scale retail investors will simply leave the market. This is already happening in the last half of '86—to the chagrin of limited partnership syndicators. Retail purchasers of $2,000 to $5,000 partnership interests have accounted for several billion dollars of new money in each of the last few years, so their loss will be perceptible in '87.

Every bit as noticeable will be the decline in tax-shelter-oriented investors in private limited partnerships. Robert A. Stanger & Co. estimates that $7.4 billion was raised by private real estate partnerships in 1985 and that the '86 figure will be lower by half. Not all private limited partnerships are deep tax shelters, but the majority were sold, at least in part, because they offered significant shelter in the early years.

Some opportunities exist to market income-oriented limited partnerships to balance the tax loss deals that people already own. It is hard to estimate the size of this potential, but it will be even harder to find enough solid income deals to serve this market.

Most new real estate projects don't stand up economically without deferred financing, hence the introduction of zero coupon bonds. Zeros make the deals harder for retail brokers to understand, let alone explain to clients. When buying tax shelter offerings, many investors felt they didn't need to understand the real estate—the presence of shelter was enough. For income-oriented investments, in contrast, the real estate is everything. Even when brokers are very well informed, complex deals are a hard sell.

The pension funds' steady flow of money and growth in foreign investment will balance the possibly decreasing interest from Individual Retirement Accounts and the loss of individual investors. With lower levels of new construction next year, the industry can expect plenty of equity capital to be available.

Mortgage financing

Mortgage money will also be readily at hand in 1987—from commercial banks, which still have low loan demand from other industries; from savings and loans, most of which have been doing well for the last couple of years; from insurance companies, which are having trouble peddling enough bullet loans because of the prepayment penalties; from mortgage companies like GE Credit; and from mortgage REITs and public partnerships.

Because ample money is out there, new construction projects can and will be financed—even though 57 percent of the experts interviewed for *Emerging Trends* candidly acknowledge that they see *no* market need for new construction today. (Those who perceived demand for new construction generally mentioned residential or industrial potential in selected markets.) Despite the dollars around, all the interviewees foresee drastically reduced new construction in 1987. Consequently, most of the mortgage money will be used for acquisition of existing buildings and refinancings.

The commercial mortgage security (CMS) has been touted for at least three years as the next step in the securitization game—building upon the incredible success of residential mortgage-backed securities. From the issuer's perspective, securitization is a good thing: properly done, it enhances the movement of capital, increases the productivity of underlying assets, creates liquidity and, importantly, generates transaction fees.

The actual number of CMSs is small—but not because of a shortage of money. In large measure it's because there hasn't been a crying need for CMSs and they are time-consuming and expensive to put together—so much so that only very large deals can justify the cost. To date, securitization has been through private placement and/or the Eurobond market, and virtually all of the issues have included credit enhancement from third parties for a fee. Widespread acceptance of this product will require:

- Substantial investor education. Many investors and developers simply do not understand CMS and will be reluctant to use it until they are better informed.
- Public placement with the attendant requirement of SEC registration. The developer/owner has to disclose financial information (rent rolls, maybe specific tenant information) and registration takes time, but this will increase investor confidence.
- Rating systems that improve credibility with investors. S&P and Moody's are just beginning to deal with the complexity and risk of only the most vanilla real estate. Rating of pools and of large, complex properties is needed. Public capital markets require more information than has traditionally been available to real estate investors.

Table 1 documents the 4.4 percent decline in REIT prices in 1985—a far worse performance than that of any other generic investment. Despite that, RERC's interviewees believe by a margin of 66 to 34 percent that investor interest in REITs will rise in 1987. A key reason is that the new tax law favors the real estate investment trust. REITs already use 40-year depreciation, are strongly yield-oriented and don't pass through losses (over income). As a result, they will not be affected by the principal changes of the tax act.

In the short run, the liquidity features of REIT investments will be especially important. Many investors caught in limited partnerships with no market for their holdings have learned in spades what illiquidity means. This lesson will not be lost on others who want to invest in real estate in the post-shelter era.

> *"With understandable ghoulishness, a lot of attention is focused on troubled real estate . . . Although much of the industry gossip is true, what is lacking is the broad perspective."*

RERC also expects that investor education about the advantages of REITs will improve in '87. Heretofore, few stock analysts have followed this investment option—for the obvious reason that there hasn't been enough money involved to make it worth their while. With renewed interest in REITs among individual investors and with more offerings brought to market, the stock brokerage firms should respond with better information and advice.

The new twist in the real estate security marketplace is the master limited partnership (MLP). Although introduced in the oil and gas business as early as 1981, MLPs have just come on the real estate scene. The NYSE-traded Burger King Investors Master Limited Partnership (fondly called A Piece of the Whopper) was offered in early '86 when Pillsbury raised cash by selling 128 Burger King properties and leases.

An MLP is a limited partnership in which the interests are tradeable on a securities exchange. The limited partners hold depository receipts as their shares, and these receipts can be bought, sold, margined, or transferred without the general partner's consent. Liquidity is the preeminent advantage of the MLP. In addition, unlike REIT investors, MLP shareholders have the benefits of partnership flow-through of gains and losses.

A master limited partnership can be offered on one or more properties. However, the newsworthy version of '87 is likely to be the two-tiered MLP. It is possible to create an MLP by rolling up a number of existing limited partnerships and converting them into a single master partnership, shares of which would be tradeable. Glenborough Ltd., for example, is an MLP created to acquire troubled limited partnerships and then turn them into income-oriented investments through restructuring and improvement. Whether this magic will be accomplished remains to be seen; but as an investment vehicle, this MLP has many of the attributes of a blind pool.

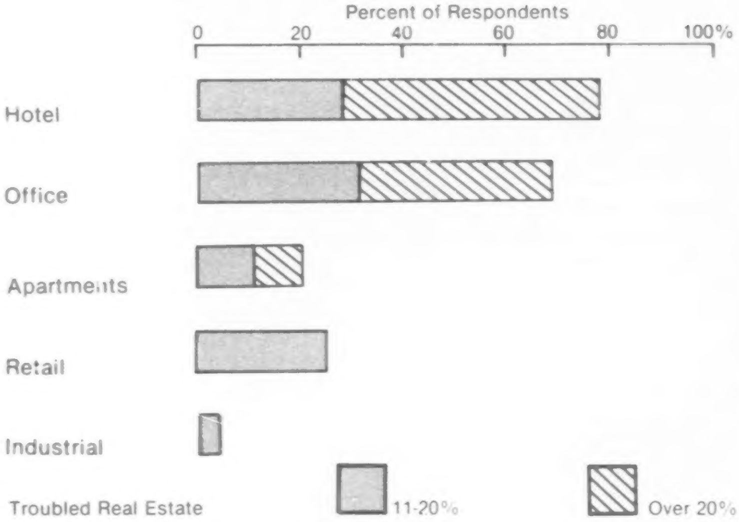
The tax and accounting intricacies of MLPs are still unfolding. Under the new tax act, however, it's a cinch that any product combining even a hint of shelter with liquidity will be a popular one for real estate investors.

Troubled properties

With understandable ghoulishness, a lot of attention is focused on troubled real estate—see-through office buildings, restructuring of tax-oriented syndications, S&L problem loans for ADC (acquisition, development, and construction), the 30 million vacant square feet in the Silicon Valley, and horror stories from Texas and Oklahoma. Although much of the industry gossip is true, what is lacking is the broad perspective: the size of the total real estate investment in the U.S. and the proportion of the total that is in trouble.

Inevitably, when asked about real estate trends, people focus on current projects more than on the mass of older established income real estate that does not attract special attention. Even the 99 experts interviewed for *Emerging Trends* fell into this trap. RERC asked them to

Figure 1 Percent of Respondents Estimating That More than 10% of U.S. Real Estate Is in Trouble



Source: Emerging Trends Interviews, Summer 1986

estimate the percentage of troubled projects in each land use category. We emphasized that they were to think about *all* investment in property and guess at the amount of distress in that context, but their answers clearly reflect a concentration on newer buildings.

Figure 1 presents the interviewees' guesses about troubled real estate. The majority thought that less than five percent of retail and industrial investments were in difficulty. However, they estimated that over 20 percent of hotels, over 11 percent of office buildings and over five percent of apartments were experiencing financial problems. This is not factually supportable.

RERC's rough calculation is that three to four percent of the total investment real estate in the United States is in trouble. (This does not include owner-occupied housing, which is in far better shape, even though mortgage defaults have gone up over the last two years. The estimate also includes farms and manufacturing facilities).

America has about $3.7 trillion invested in privately owned multifamily and income-oriented commercial property. Of that total, an estimated $970 billion is in investment-grade commercial holdings (including large apartment projects). RERC calculates that about six percent of the investment-grade properties are in trouble—and that the ultimate cash loss will amount to as much as $6 to $7 billion (a lot of money but still only 0.7 percent of the total investment).

According to these calculations, investment-grade properties constitute 26 percent of all income real estate. The vast majority of properties are actually small, old and/or used directly by the owners for their businesses. Much of this property is not mortgaged and most is fully occupied. Hence, the ratio of "trouble" in this portion of the inventory is far lower—three percent or less.

In the aggregate, troubled commercial real estate represents three to four percent of the whole. That is far below the perceptions of either the general public or most industry professionals.

At the same time, the current "trouble rate" is four times higher than the less than one percent that can be considered normal. We are certainly not making light of today's financial problems in commercial real estate. For large numbers of owners, lenders and developers, the situation is very serious. Furthermore, when troubled properties are clustered, they can blight surrounding buildings. Still, in looking at the industry, the tribulations of overextended individuals and financial institutions should be considered in the context of total real estate investment. With that perspective, most real estate projects are in good shape. □

Emerging Trends in Real Estate: 1987 was written by Leanne Lachman, president, and Richard Kateley, executive vice president of Real Estate Research Corporation. The findings are based on in-depth interviews with 99 leading real estate investors, lenders, syndicators and developers. For the second consecutive year, *Emerging Trends* has been underwritten by Equitable Real Estate Investment Management Corporation.

Lachman

Kateley

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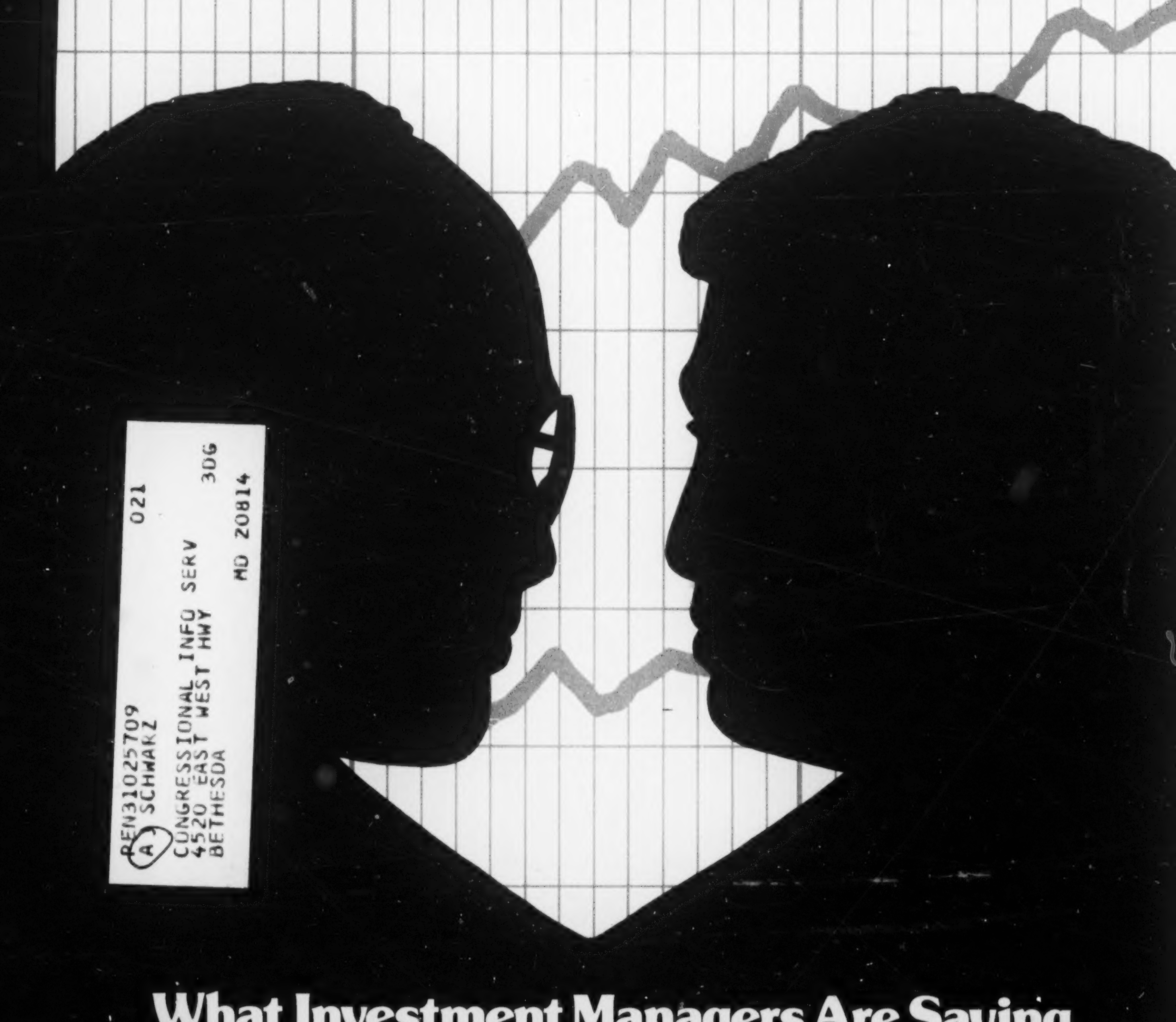

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What Investment Managers Are Saying About Performance-Based Fees

Directory of Master and Directed Trust Services

Pension World

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What are investment managers saying about performance-based fees?

In recent months, the topic of incentive-based fees for professional investment advisors has appeared increasingly in financial publications. The Securities and Exchange Commission's (SEC) approval of incentive-based fees in November 1985 has brought about a flood of comments and inquiries from sponsors and money managers alike. The purpose of this article is to share some opinions and offer some guidelines.

Survey highlights

In response to the SEC's change in attitude toward performance incentive-based fees in late 1985, we thought it would be informative to sample the opinions of the investment advisors participating in our Graphical Ranking of Investment Descriptors (GRID) Universe. A brief questionnaire was distributed; the investment advisors were asked their attitude toward incentive-based fees, whether they had been approached to consider the arrangement, and if they had any clients on an incentive-fee basis. The managers were then given ample space to expound on their attitude toward incentive-based fees.

Of the 478 investment advisors polled, 160 managers, or 33 percent, replied to the survey. The organizational structure of the firms responding was representative of our broader universe. Seventy-one percent were independent advisors, while bank-related and insurance company-related managers were evenly represented. Fifty percent of the respondees were managers with assets less than $1.0 billion. Managers with assets ranging from $1.0 to $5.0 billion accounted for 29 percent, while the larger organizations totaled 21 percent.

Based on the replies, we found no majority opinion; however, a larger percentage of managers favored performance incentive-based fees rather than opposed them. Specifically, 47 percent favored incentive-based fees, while 18 percent were opposed. An unexpectedly large group, 35 percent, was uncertain or was not prepared to render an opinion until the industry had a chance to digest the topic.

As far as actual implementation is concerned, 45 percent of those polled have been approached to consider an incentive-based fee arrangment; 15 percent of those surveyed have an incentive fee arrangement; and 20 percent are currently negotiating an incentive fee with clients.

Plan type appears to be a factor in the use of incentive-based fees. For accounts using an incentive fee, the majority are pension plans. This group is followed by endowment/foundation and profit-sharing funds.

These responses can be broken down by the type of investment advisor surveyed: independent, bank-related or insurance company-related advisor.

by **CHARLES W. GREGOR**
Assistant Vice President
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Independent Advisors. Sixty-four percent of the independents polled had assets under management of less than $1.0 billion. Of that number, 48 percent were in favor of incentive fees, while 22 percent were opposed. Likewise, 48 percent of the mid-sized independents were in favor, while only 18 percent were opposed. The larger-sized (greater than $5.0 billion) independent advisors held no surprises, with 44 percent of those returning the survey in favor of incentive-based fees.

Bank-Related Advisors. Sixty-nine percent of the bank-related respondents had assets over $5.0 billion. Of that number, 36 percent were in favor of incentive fees, and only 18 percent were opposed. The mid-sized bank managers were evenly divided among the three choices. Small-sized bank advisors tended to be uncertain about the subject, possibly waiting for a lead from their larger counterparts.

Insurance Company-Related Advisors. Fifty percent of the insurance company-related respondents had assets over $5.0 billion. Of that number, one-third were in favor of incentive fees, while only 11 percent were opposed. Of the mid-size insurance company-related respondents, the majority of managers were in favor of the concept. None of the respondents was opposed to the idea. This response would seem to be a quirk in the survey and not representative of the attitude of the insurance company universe.

Respondents were invited to comment on these fee arrangements. As would be expected from the results of the survey, opinions do vary. Some of the advisors polled expounded further on their attitude. As one advisor stated, "...[We] believe that, where properly structured, incentive-based fees are an attractive compensation arrangement for both sponsor and investment advisor." Another felt that "Incentive fees are appropriate when used to encourage managers to take appropriate risk levels and prevent the normal slide toward indexation." However, the opposing view was that "...fee penalties may have the perverse effect of increasing the trend toward 'closet' indexations..." One advisor declared, "In theory, incentive fees should help managers with outstanding performance records, by forcing more attention on results." As noted by another, "We see the industry strongly moving in this direction, especially with sponsors who want specialty managers to assume risk levels greater than a market average."

Those advisors against incentive-based fees were just as vocal as those in favor of them. One advisor claimed that "...from a business standpoint, incentive fees could be attractive; however, from a fiduciary standpoint, they could cause [the advisor] some concern." Others stated, "Incentive fees change the focus from achieving consistent long-term investment goals per client to making the most bucks before the end of the quarter." An opinion voiced by several advisors was that "...[no one] is going to work harder as a result of performance fees. If a client is not satisfied with an advisor's work, [the client] should fire him ... Conversely, good results carry their own incentive..." And finally, some advisors believe that "all clients should be on the same footing insofar as fees are concerned."

General guidelines

Incentive-based fees, much like investment objectives, must be examined on a case-by-case basis. There is no blanket statement that will cover all clients. An advisor that takes substantially more risk than the market may be a candidate for incentive-based fees. Also, one may argue that until an advisor has proven to "add value" over an unmanaged index, the client should not pay a fee greater than those charged by index-fund advisors.

For an incentive-based fee arrangement to work, four matters must be critically addressed. First, the fee must be fair and equitable to both the advisor and the client. The base fee should be sufficient to cover costs of doing business plus an incremental profit. The incentive portion, with specified caps, should be structured to reward stellar performance and to censure underperformance. The arrangement has to have "give and take" on both sides. Second, the measurement time pe-

Five Examples of Incentive Fees

Example 1
Incentive fees above a base fee are prorated as performance approaches target.

Minimum fee = 0.2%
If return > bogey + 2.0%, fee = 1.0%
Maximum fee = 1.5%, if return > bogey + 3.5%

If the bogey is the S&P 500 stock index, which returns 14.5%, an investment advisor must return at least 16.5% to earn a 1.0% fee. If the advisor's return is 12.5%, only a 0.5% (prorata from minimum) fee would be payable. On the other hand, if the return was greater than 18.0%, a 1.5% fee would be owed the manager.

Example 2
The advisor receives 20% share in performance above or below an appropriate index, i.e.:

Index	Advisor	Increment to Fee
10%	12%	+40 bp
10	8	−40 bp

Downside limit equals a low flat fee.

Example 3

Relative Performance to Bogey	Fee Adjustment
Bogey ± 4%	± 20%
Bogey ± 2%	± 10%

Compared on a three-year trailing basis.

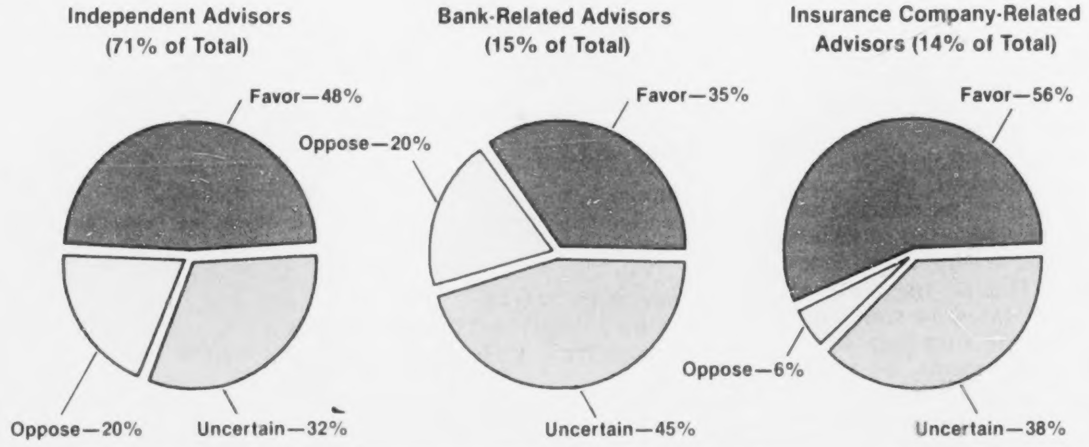
Example 4
Minimum fee = 0.2%

Fee
Return > Bogey + 100 bp = 0.4%
+ 200 bp = 0.6%
+ 300 bp = 0.8%
+ 400 bp = 1.0%

Maximum fee = 1.0%

If an advisor's return equals the bogey—in this case, the S&P 500—the fee would be the low "index-like fee" of 0.2% of assets. If, however, the advisor betters the bogey by 400 bp or 4%, the maximum fee of 1.0% is charged.

Example 5
A fulcrum fee ranging from 0.1% to 0.9% with a fee of 0.5% for S&P 500 plus 1% performance over a three-year trailing period.



How Investment Advisors View Performance-Based Fees (Based on 478 Respondents)

riod must be long enough to capture a "market cycle" of the advisor's management style, but not so long that the measurement becomes meaningless. Third, the advisor must be closely monitored to assure that the returns are obtained within predetermined risk parameters and that the advisor doesn't vary from his management style to pick up added return.

Finally, the universe of stocks that comprise the bogey index must be carefully constructed. For some advisors, the S&P 500 Index may be perfect; while for others, a much broader or narrower index must be constructed. In other words, an intelligent index construction is paramount to a fair incentive system.

The accompanying highlight provides five examples of incentive-based fee structures that are currently being used or negotiated by the polled advisors. The symbol "bp" stands for basis point or 0.01 percent. These examples are not meant to be our recommendations for an incentive-based fee structure, but only examples supplied for educational purposes.

Conclusion

The results of the incentive-based fee poll are surprising. It is unexpected that such a large number, 47 percent, would be in favor of the fee arrangement. Even more unexpected, only 18 percent of those managers responding are against the system. It is not surprising that 65 percent do not have a client on an incentive-fee basis. This percentage will probably decrease as more clients become aware of its use. ☐

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Is a South Africa-free portfolio a good investment?

by **MILTON J. EZRATI**
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South African divestiture has received a lot of discussion in the general press lately, but in all this debate surprisingly little attention has focused on the investment aspects of the question. This essay aims to remedy that deficiency.

The discussion here ignores those moral, political, military and administrative questions that have taken up the bulk of the discussion to date and concentrates instead on the risk and performance characteristics of portfolios before and after divestiture; in so doing, it comes to conclusions that fly in the face of received wisdom. Most notably, the analysis shows that even though the South Africa exclusion radically changes the character of the available universe of stocks, it need not necessarily skew relative investment performance. Of course, blind divestiture, without efforts to rebalance a portfolio's industry and investment characteristics, can profoundly affect performance. But a rigorous attempt to rediversify after divestiture can avoid much of the investment bias otherwise implicit in the action. Indeed, it is possible, by carefully diversifying across an enlarged universe of stocks, actually to create a South Africa-free portfolio that mirrors the character and performance of the S&P 500, even though half the capitalization of that index is in companies with South African interests.

This finding, of course, has sev-

Table 1 Investment Characteristics of the S&P 500 Index with and without South Africa (June 30, 1986)

	S&P 500	Purged S&P 500[1]	Relative
Market Capitalization	$22.64	$22.22	98.14%
Liquidity	72.77%	72.22%	99.24
Growth	9.98%	10.39%	104.11
Earnings Variation	0.4859	0.5269	108.44
Foreign Income	16.60%	10.63%	64.04
Labor Intensity	24.28%	19.93%	82.08
Beta	1.0000	1.0331	103.31
Price/Earnings Ratio	13.97	13.76	98.50
Price-to-Book Ratio	1.76	1.65	93.75
Financial Leverage	21.22%	23.74%	111.88
Yield	3.85%	3.92%	101.82

[1] Excluding companies doing business in South Africa.

Market Capitalization:	Total market capitalization of the average company in the sample. Expressed in billions of dollars.
Liquidity:	Quarterly turnover of shares in the average company in the sample. Expressed as a percent of total shares outstanding.
Growth:	Growth in total assets of the average company in the sample. Expressed as an annual percent rate.
Earnings Variation:	Variance of earnings around its mean of the average company in the sample.
Foreign Income:	Operating income from foreign sources for the average company in the sample. Expressed as a percent of total income from all sources.
Labor Intensity:	Labor's share of total revenues for the average firm in the sample. Expressed as a percent.
Beta:	Historical beta.
P/E Ratio:	Based on current price and trailing 12-month earnings.
Price/Book Ratio:	Based on current price and last stated book value.
Financial Leverage:	Debt-to-assets ratio. Expressed as a percent.
Yield:	Indicated annual dividend to price. Expressed as a percent.

> *"Contrary to popular belief, the cost of divestiture is not necessarily in skewed returns. Rather, the cost is in the demands it places on the portfolio manager . . ."*

eral important implications for all investment managers. First, it means that it is possible to run a South Africa-free fund that is otherwise indexed to the S&P 500. Second, it means that investors can reasonably ask for divestiture from any manager and yet still insist on measuring that manager's performance against the 500 instead of some adjusted universe, as many do. Most generally, however, this finding means that contrary to popular belief, the cost of divestiture is not necessarily in skewed returns. Rather, the cost is in the demands it places on the portfolio manager to make more broad, more careful, more rigorous applications of the principles of diversification than are usually required under less constrained circumstances.

A South Africa-free S&P

These conclusions are surprising probably because the bulk of the investment discussion of divestiture (as little as there has been) has centered on simple assertions about likely returns or, at best, crude performance comparisons. Some of these comparisons conclude that divestiture helps relative performance; others say it hurts it. Almost all are inadequate because they were conducted over limited time periods and take little or no account of anything else that affected stocks at the time. For example, a simple divestiture will tend to create a small-stock bias in the

Table 2 **Industry Characteristics of the S&P 500**

	S&P 500	Purged S&P 500	Relative
Metals & Mining	2.04%	2.73%	133.8%
Aluminum	0.47	0.88	187.2
Iron & Steel	0.34	0.58	170.6
Precious Metals	0.17	0.24	141.2
Coal & Uranium	0.53	0.56	105.7
Miscellaneous	0.53	0.47	88.7
Oil	12.29%	12.18%	99.1%
International	4.35	1.56	35.9
Domestic Reserves	3.93	4.79	121.9
Foreign Reserves	1.57	2.11	134.4
Refining & Distribution	1.07	1.64	153.3
Oil Service	1.38	2.08	150.7
Agriculture & Forest Products	6.07%	7.08%	116.6%
Forest Products	0.35	0.61	174.3
Paper	2.16	2.75	127.3
Agriculture, Food	3.56	3.72	104.5
Food, Tobacco & Packaged Goods	5.26%	5.50%	104.6%
Beverages	0.86	0.31	36.1
Liquor	0.90	1.10	122.2
Tobacco	1.02	1.00	98.0
Soaps	1.11	1.37	123.4
Cosmetics	0.59	0.28	47.5
Retail Food	0.78	1.44	184.6
Other Consumer	11.34%	12.04%	106.2%
Nonfood Retail	4.72	8.50	180.0
Apparel & Textiles	0.60	0.74	123.3
Photographic & Optical	1.16	0.17	14.7
Motor Vehicles	3.36	0.82	24.4
Non-Auto Durables	0.91	0.86	94.5
Leisure & Luxury	0.59	0.95	161.0
Drugs & Health Care	6.48%	1.80%	27.8%
Drugs	4.62	0.38	8.2
Health Care	1.86	1.42	76.3

with and without South Africa (June 30, 1986)

	S&P 500	Purged S&P 500	Relative
Publishing & Media	3.57%	3.07%	86.0%
Publishing	1.73	2.03	117.3
Media	1.84	1.04	56.5
Transport & Travel	4.20%	6.76%	161.0%
Hotels & Restaurants	1.76	2.56	145.5
Air Transport	0.74	1.05	141.9
Railroads	1.32	2.44	184.9
Trucking	0.30	0.56	186.7
Transport by Water	0.08	0.15	187.5
Intermediate Goods	8.17%	4.38%	53.6%
Chemicals	3.59	1.69	47.1
Tire & Rubber	0.26	0.07	26.9
Containers	0.20	0.09	45.0
Misc. Producers Goods	4.12	2.53	61.4
Capital Spending & Defense	16.93%	9.79%	57.8%
Business Machines	9.14	2.32	25.4
Electronics	2.74	2.47	90.2
Construction	1.17	1.70	145.3
Aerospace	3.46	2.53	73.1
Pollution Control	0.42	0.77	183.3
Utilities	13.75%	23.84%	173.4%
Electric	4.71	8.81	187.1
Gas	1.41	2.41	170.9
Telephone	7.63	12.62	165.4
Financial	7.77%	8.53%	109.8%
Banks	2.40	2.20	91.7
Thrift Institutions	0.25	0.46	184.0
Life Insurance	1.13	1.68	148.7
Other Insurance	2.27	3.08	135.7
Misc. Financial	1.72	1.11	64.5
Other	2.39%	2.32%	97.1%
Real Property	0.21	0.38	181.0
Services	1.21	1.10	90.9
Miscellaneous	0.97	0.84	86.6

resulting portfolio. Measure performance over a period when small stocks outperformed the average and it appears that divestiture helps; measure over a period when small stocks underperformed and it appears that divestiture hurts. Either way, the results are largely serendipitous and have little bearing on likely future results, unless there is a strong conviction on the future relative performance of small stocks and a confidence that nothing else will matter.

Such a casual approach to divestiture, as popular and common as it is, is no way to manage large sums of money (especially if one is a beneficiary). A more appropriate way would start by comparing a full range of investment and industry characteristics in portfolios that include companies with South African affiliations and portfolios that exclude them. Tables 1 and 2 show the results of just such a comparison between the entire S&P 500 and the 500 less the current number of 142 offending companies—an S&P 358, so to speak.

Actually, just setting the lists for divestiture can impose a significant hurdle. There are a number of sources of information on the South African operations of public companies, and the number of companies varies over time. These sources do not always agree, which can complicate things greatly. A widely used authority is The International Council for Equality of Opportu-

Table 3

Relative Performance of the S&P 500 Index with and without South Africa (December 31, 1980 through June 30, 1986)

		S&P 500 With South Africa			S&P 500 Without South Africa		
		Quarterly Return	Annual Return	Cumulative Return	Quarterly Return	Annual Return	Cumulative Return
1981	1st Qtr	1.4%		1.4%	3.9%		3.9%
	2nd Qtr	-2.3%		-1.0%	-0.8%		3.1%
	3rd Qtr	-10.3%		-11.2%	-9.7%		-6.9%
	4th Qtr	6.9%	-5.1%	-5.1%	7.6%	0.1%	0.1%
1982	1st Qtr	-7.1%		-11.8%	-8.6%		-8.4%
	2nd Qtr	-0.5%		-12.2%	-1.2%		-9.6%
	3rd Qtr	11.4%		-2.2%	11.1%		0.5%
	4th Qtr	18.1%	21.7%	15.5%	17.9%	18.3%	18.4%
1983	1st Qtr	10.0%		27.1%	11.1%		31.5%
	2nd Qtr	11.0%		41.1%	10.1%		44.8%
	3rd Qtr	-0.2%		40.8%	-1.6%		42.5%
	4th Qtr	0.3%	22.2%	41.2%	0.1%	20.4%	42.6%
1984	1st Qtr	-2.4%		37.8%	-1.9%		39.9%
	2nd Qtr	-2.6%		34.2%	-3.1%		35.5%
	3rd Qtr	9.6%		47.2%	9.9%		49.0%
	4th Qtr	1.8%	6.1%	49.7%	1.9%	6.5%	51.9%
1985	1st Qtr	9.3%		63.6%	9.5%		66.2%
	2nd Qtr	7.3%		75.5%	8.7%		80.7%
	3rd Qtr	-4.2%		68.1%	-5.8%		70.2%
	4th Qtr	17.1%	31.4%	96.8%	17.2%	31.4%	99.5%
1986	1st Qtr	14.0%		124.3%	13.2%		125.7%
	2nd Qtr	5.8%	20.5%*	137.3%	5.9%	19.8%*	139.1%

*Six month return.

nity Principles, Inc., whose lists form the basis of this analysis. Of course, even when the information source is set, the confusion remains, since "South Africa-free" can have any number of definitions. Some would exclude only those companies which do business in South Africa and have failed to sign the Sullivan Principles, drawn up some years ago by the Rev. Dr. Leon H. Sullivan as a guide for American firms operating under apartheid. Some would ignore the Sullivan Principles but would exclude only those firms with a "significant" presence in South Africa. So, for example, General Motors, which operates an assembly plant, would be excluded even though it has signed the Sullivan Principles, but CBS could be included, even though it has failed to sign the Sullivan Principles, because it only maintains a representative office in South Africa. Then there are some who would exclude any company that has any dealings at all in South Africa. This last, most severe approach cuts out half the capitalization of the S&P 500. This approach forms the basis of this analysis, not because it is most appropriate, but because it is most severe and therefore the best way to test the investment implications of the divestiture decision.

A careful examination of the accompanying tables shows clearly that this exclusion does in fact change the character of the S&P drastically. A look at the investment characteristics in Table 1 shows the small-stock bias that has already been mentioned. But these relative measures show many more significant differences. The South Africa-free subset clearly shows a much greater financial leverage than the whole S&P 500 as well as a larger proportion of companies with earnings that are faster growing and much more variable than in the full index. All this, of course, fits with the general small-stock bias among the South Africa-free stocks. The group that is purged of South Africa also shows a much lower labor intensity and less foreign exposure than the full 500. The relatively low use of labor fits with the high financial leverage because it implies an enlarged role for financial capital and capital equipment in production and the conduct of business. Since the capital is effectively overhead, this condition also implies a high sensitivity of earnings to the volume of production and business activity in general, which in turn suggests a greater sensitivity to economic cycles in the purged group than in the whole 500. The low foreign exposure also stands to reason, since most international concerns are likely to have at least some presence in a naturally rich country like South Africa. This, of course, suggests that the purged group is much less sensitive to currency swings—good or bad—than is the full S&P 500. Although the South Africa-free subset shows slightly lower price-to-book and price/earnings ratios than does the full index, it carries a higher beta, suggesting a heightened sensitivity to market swings, which probably reflects another link to its small-stock bias.

Table 2 compares 54 distinct industry groups (determined by correlations of stock price movements). Few industries show a pro-

Table 4 Investment Characteristics of the Enlarged Universe and the S&P 500 (June 30, 1986)

	S&P 500	Enlarged Universe South Africa-Free	Relative
Market Capitalization	$22.64	$21.77	96.16%
Liquidity	72.77%	67.82%	93.20
Growth	9.98%	10.52%	105.41
Earnings Variation	0.4859	0.5543	114.08
Foreign Income	16.60%	9.67%	58.25
Labor Intensity	24.28%	19.72%	81.22
Beta	1.0000	1.0283	102.83
Price/Earnings Ratio	13.97	13.37	95.71
Price-to-Book Ratio	1.76	1.65	93.75
Financial Leverage	21.22%	23.74%	111.88
Yield	3.85%	3.85%	100.00

portionate reduction from the South Africa exclusion, so the relative industry weights in the South Africa-free group are very different from those of the whole index. In at least 27 cases (half the industries), the differences are enormous. Thus, international oils virtually drop out of the purged group, since most companies in this group have a presence in almost every major country in the world, including South Africa. The South Africa-free group carries barely over one-third the weight in this area that is held in the whole index. Similar circumstances are true in other industries that are known for their global orientation: beverages, cosmetics, photography, motor vehicles, drugs, chemicals, rubber, containers, and business machines. Because the whole process is one of exclusion, those industries with the least to exclude are overweighted in the purged group, i.e., those with a domestic orientation: metals, oil refining and service, forest products, retail, leisure, transportation, pollution control, utilities, thrift institutions, and real estate.

Post-purge performance

Since these differences between the purged group and the entire 500 change relatively little over time, this analysis (based on June 1986 numbers) helps clarify why at different times in the past the South Africa-free group outperformed or underperformed the whole S&P 500. Table 3 shows absolute and relative performance on a quarterly, annual and cumulative basis since 1981.

Even going back before the formal performance measurement begins here, it should be clear from this analysis that in the late 1970s and early 1980s, when energy issues were leading the market, the clear lack of international oils in the South Africa-free group would have caused it to underperform the entire 500. The domestic orientation of the purged group also would have hurt its relative performance during this time, since the foreign exchange value of the dollar was falling rapidly then, and that tended to benefit multinational and trade-oriented firms relative to others. Furthermore, the late 1970s and 1980 were times of rapidly rising interest rates, which would have hurt the performance of the South Africa-free group because of its clear overweight in interest-sensitive areas such as utilities and financial stocks, especially thrifts. The comparatively high financial leverage of this purged group also suggests a drag on its relative performance during those financially strained years.

Through 1981, the South Africa-free group was showing clearly superior returns to the overall 500 index, largely because circumstances by then had completely reversed from the late 1970s. Oil stocks, particularly internationals, were suffering, giving a relative edge to this group with its clear underweighting in the area. Also by 1981, the dollar had begun its remarkable rise on foreign exchange markets, hurting multinationals in which the purged group is light. Interest rates also peaked in 1981—short rates early in the year, long rates later in the year. That change from rising to falling interest rates gave a relative boost to the highly interest-sensitive South Africa-free group, with its generally high financial leverage and its overweighting in financial stocks and utilities. Actually, this purged group might have done even better relative to the 500 during this time were it not for its heavy relative weight in capital-intensive companies and industries, such as metals (precious and otherwise), forest products, transportation and real estate. Stocks in all those economically sensitive areas suffered relative to the entire S&P during that year's recession-induced bear market. The relatively high beta of the South Africa-free group also counted against performance during this time of falling stock prices. But clearly none of these relative drawbacks overcame the other clear positives working for the purged group in the environment of 1981.

During most of 1982 and a good part of 1983, the South Africa-free group lost ground to the full 500 stock index. The high beta of the South Africa-free group should have helped relative performance during the bull market that prevailed during much of this time. The continued rise in the foreign exchange value of the dollar should also have benefited the purged group. But these were not sufficient to offset performance problems on three other fronts. First the classic cyclical, economically sensitive stocks ran their course early in this period and then began to adjust back. This acted against the economically sensitive purged group, despite the fact that the economy was in a robust recovery during much of the time. Second, by mid-1983, interest rates were on the rise again, which naturally hurt the purged group with its high financial leverage and overweightings in utilities and financials. Third, during this time investors began to realize the negative impact of disinflation on corporate earnings. This quickly lead to a reaction against small-sized companies or those with any volatility in earnings. It even caused a flight from growth stocks. With a clear bias toward all these areas, the

> *"Despite its high beta and general interest sensitivity, the South Africa-free group has underperformed the S&P 500 index during most of the last twelve months."*

South Africa-free group suffered.

Relative performance was mixed for most of 1984, although on balance the South Africa-free group gained modestly on the full 500 index during this time. The gains became stronger during the first half of 1985. Part of this came from the high beta of the purged group, since the market was rallying during this time. Also, by late 1984 and very early in 1985, the dollar was soaring on foreign exchange markets, wreaking havoc with U.S. multinationals and other trade-oriented firms and thereby giving a relative boost to the purged group with its clearly domestic orientation. Oil stocks suffered during much of this time, too, which, of course, was a clear benefit to the energy-light South Africa-free group. Furthermore, by 1984, investors had begun their aversion to technology stocks, an area in which the purged group is underweighted. Investors during this time did continue their aversion to small stocks and to those with volatile earnings. This held back the relative performance of the South Africa-free group but clearly not sufficiently to outweigh the rest of these generally favorable influences.

During the last twelve months, stocks have appreciated dramatically, largely in response to falling interest rates. Despite its high beta and general interest sensitivity, the South Africa-free group has underperformed the S&P 500 index dur-

Table 5 **Industry Characteristics of the Enlarged**

	S&P 500	Enlarged Universe South Africa-Free	Relative
Metals & Mining	2.04%	2.54%	124.5%
Aluminium	0.47	0.60	127.7
Iron & Steel	0.34	0.51	150.0
Precious Metals	0.17	0.22	129.4
Coal & Uranium	0.53	0.56	105.7
Miscellaneous	0.53	0.65	122.6
Oil	12.29%	12.65%	102.9%
International	4.35	1.96	45.1
Domestic Reserves	3.93	4.70	119.6
Foreign Reserves	1.57	2.37	151.0
Refining & Distribution	1.07	1.95	182.2
Oil Service	1.38	1.67	121.0
Agriculture & Forest Products	6.07%	5.77%	95.1%
Forest Products	0.35	0.45	128.6
Paper	2.16	2.29	106.0
Agriculture, Food	3.56	3.03	85.1
Food, Tobacco & Packaged Goods	5.26%	5.44%	103.4%
Beverages	0.86	0.30	34.9
Liquor	0.90	0.91	101.1
Tobacco	1.02	1.43	140.2
Soaps	1.11	1.11	100.0
Cosmetics	0.59	0.21	35.6
Retail Food	0.78	1.48	189.7
Other Consumer	11.34%	9.83%	86.7%
Nonfood Retail	4.72	6.55	138.8
Apparel & Textiles	0.60	0.70	116.7
Photographic & Optical	1.16	0.19	16.4
Motor Vehicles	3.36	0.71	21.1
Non-Auto Durables	0.91	0.92	101.1
Leisure & Luxury	0.59	0.76	128.8
Drugs & Health Care	6.48%	2.26%	34.9%
Drugs	4.62	0.77	16.7
Health Care	1.86	1.49	80.1

Universe and the S&P 500 (June 30, 1986)

	S&P 500	Enlarged Universe South Africa-Free	Relative
Publishing & Media	3.57%	3.30%	92.4%
Publishing	1.73	2.09	120.8
Media	1.84	1.21	65.8
Transport & Travel	4.20%	6.01%	143.1%
Hotels & Restaurants	1.76	2.28	129.6
Air Transport	0.74	1.10	148.7
Railroads	1.32	1.66	125.8
Trucking	0.30	0.58	193.3
Transport by Water	0.08	0.39	487.5
Intermediate Goods	8.17%	5.01%	61.3%
Chemicals	3.59	2.14	59.6
Tire & Rubber	0.26	0.18	69.2
Containers	0.20	0.10	50.0
Misc. Producers Goods	4.12	2.59	62.9
Capital Spending & Defense	16.93%	8.19%	48.4%
Business Machines	9.14	2.10	23.0
Electronics	2.74	2.26	82.5
Construction	1.17	1.42	121.4
Aerospace	3.46	1.93	55.8
Pollution Control	0.42	0.48	114.3
Utilities	13.75%	22.36%	162.6%
Electric	4.71	10.39	220.6
Gas	1.41	2.64	187.2
Telephone	7.63	9.33	122.3
Financial	7.77%	12.97%	166.9%
Banks	2.40	5.62	234.2
Thift Institutions	0.25	0.49	196.0
Life Insurance	1.13	1.70	150.4
Other Insurance	2.27	2.99	131.7
Misc. Financial	1.72	2.17	126.2
Other	2.39%	3.40%	142.3%
Real Property	0.21	0.48	228.6
Services	1.21	2.01	166.1
Miscellaneous	0.97	0.91	93.8

ing most of this time. Part of the reason is the decline in the foreign exchange value of the dollar that began a bit over a year ago. This has given a boost to pharmaceuticals, chemicals and other areas with a global orientation. The purged group is not only light in these key industries, it also holds a clear bias toward domestic operations within most industry groups. Probably more important to the relative underperformance is the intensification during this time of investors' suspicions about small stocks and earnings growth. There was a clear penalty imposed on the stock of any company that showed volatile earnings or high financial leverage. All these characteristics are clearly evident in the South Africa-free group. The low labor intensity of this purged group, i.e., high capital intensity, also counted against its relative performance as the tax reform legislation pushed investors away from firms with large write-offs for depreciation and the investment tax credit. The South Africa-free group has only begun to outperform the 500 again during the last couple of months, primarily because of its relatively heavy weight in utilities and financial stocks.

All the relative over- and underperformance nets out about even on a cumulative basis over the entire five-and-one-half-year stretch. But that is small comfort from a portfolio whose absolute and relative performance has swung widely from

Table 6 Investment Characteristics of the Optimized South Africa-Free Index Portfolio (June 30, 1986)

	S&P 500	Optimized Index	Relative
Market Capitalization	$22.64	$22.26	98.32%
Liquidity	72.77%	67.27%	92.44
Growth	9.98%	9.84%	98.60
Earnings Variation	0.4859	0.4996	102.82
Foreign Income	16.60%	19.66%	118.43
Labor Intensity	24.28%	22.42%	92.34
Beta	1.0000	1.0000	100.00
Price/Earnings Ratio	13.97	13.97	100.00
Price-To-Book Ratio	1.76	1.65	93.75
Financial Leverage	21.22%	22.30%	105.09
Yield	3.85%	3.88%	100.80

month to month during this time. As the wild swings suggest, this even netting out speaks less to any stability in the South Africa-free group than to an accident of the particular time period of the test. And as should be quite clear from this analysis, a simply purged portfolio has sensitivities that are very different from those of the full 500, so that this South Africa-free subset has gone from as much as 200 basis points ahead of the S&P 500 in one month to as much as 150 basis points behind it in another. These swings imply risk, instability and a lack of control relative to what might be gained in equities. It is the major drawback of this casual approach to divestiture.

Gaining control

But even facing a severe South Africa-free directive, a manager does not have to accept all these biases and risks. With a careful selection of securities to rediversify the portfolio after a purge of unwanted companies, a manager can re-establish a link to the full S&P 500 and thereby effectively regain control of the portfolio relative to this important benchmark. Of course, to do this effectively, the manager must choose from a broader univese of stocks than is commonly used. Even then, such a rebalancing effort takes a greater facility with the principles and practice of diversification than is presently common in the money management community.

Although simply broadening the universe helps, as Tables 4 and 5 show, it is not enough to regain control. These tables make the same analysis as was just done for the S&P 500, except they are based on a universe of 1,400 stocks (referred to as the A1000 universe), which includes the S&P 500 and which drops down to about 1,100 issues when purged of South African-affiliated companies. Without any elaborate analysis, a simple comparison of the relative values from Table 4 with those of Table 1 shows clearly that in terms of investment characteristics, a simple purge of the S&P 500 or a simple purge of this enlarged universe leaves similar biases of about the same magnitude. Both purged universes have a high beta and carry an orientation toward domestic business, small stocks, high financial leverage, and growth with volatile earnings.

In terms of industry mix, however, the enlarged universe has definite advantages. For instance, while the purge of South African-affiliated firms from the enlarged universe still leaves a group that is underweighted in international oils relative to the whole S&P, it is not nearly as extreme as the simple purge of the S&P 500 to a 358-stock group. The same is true in drugs, media, chemicals, rubber and containers. The enlarged universe after a South Africa purge also carries industry overweightings similar to those of the 358, but neither are they as extreme. In forest products, for example, the larger South Africa-free group carries an overweighting of 129 percent of the whole S&P 500, compared with the 358's overweighting of 174 percent. Similarly in the retail area, the enlarging of the universe takes the overweighting down to 139 percent of the whole S&P 500 from 180 percent in the 358. There are some areas where the enlarging of the universe causes further distortions of the industry mix, but, by and large, the industry mix of the South Africa-free portion of the broader group more closely resembles that of the whole S&P 500. In the 27 industry groups where the 358 is vastly different from the S&P 500, the step to a larger universe hurts in only a half-dozen cases and helps in over a dozen. And when the enlarged universe moves the weights closer to the whole 500, it goes much further than when it moves them away.

Although the improved industry mix promises some heightened control of a South Africa-free portfolio relative to the S&P 500, an optimal selection of individual issues within industry groups can actually bring the investment characteristics of a portfolio close to those of the entire S&P 500. In this way, it is possible to regain a good measure of control over the South Africa-free portfolio. Indeed, it is possible in this way to create a South Africa-free index portfolio that will, in fact, track the performance of the 500 quite closely.

Index portfolio

Tables 6 and 7 analyze just such an optimal South Africa-free index portfolio. By contrast to either of the two previous analyses, this portfolio is much closer to the characteristics of the whole S&P 500 than either the South Africa-free 358 or the enlarged South Africa-free stock universe (Table 8).

Of course, there is no way to completely fill the gap left by the expulsion of all the undesirable companies. The optimized index portfolio remains underweighted in international oils, for example, but not nearly as underweighted as either the purged S&P universe or even the enlarged universe. This movement closer to the entire S&P 500 occurs in all but five of the cases where a simple purge causes a significant underweighting or overweighting.

"Except in key industries, such as oil, matching the investment characteristics is more important to replicating the index's performance than is matching the industry mix."

There are a few instances where industry over- and underweightings are actually greater in the optimized index portfolio than in the simply purged S&P. Sometimes these divergences occur in industries with close correlations to others, where shifting the pieces makes for a more 500-like whole. Thus "coal & uranium" is moved to a significant underweighting to allow for a relative rise in the weight of international oil. At other times, these divergences exist in very small industry groups such as precious metals, where seemingly significant differences mean little to the whole portfolio's relative performance. In most cases, however, these shifts away from a perfect S&P-like industry mix arise from an effort to better match the portfolio's investment characteristics to the 500.

Except in key industries, such as oil, matching the investment characteristics is more important to replicating the index's performance than is matching the industry mix. And as the first part of Table 8 shows, the attempt to match investment characteristics through the optimal selection of issues within industries, together with a judicious shifting of industry weights has largely succeeded. In all but one case (market liquidity), the investment characteristics of the optimized South Africa-free index portfolio are about equal or much closer to those of the S&P 500 than are the characteristics of either the 358 or

Table 7 **Industry Characteristics of the Optimized**

	S&P 500	Optimized Index	Relative
Metals & Mining	2.04%	2.02%	99.0%
Aluminum	0.47	0.80	170.2
Iron & Steel	0.34	0.37	108.8
Precious Metals	0.17	0.04	23.5
Coal & Uranium	0.53	0.46	86.8
Miscellaneous	0.53	0.35	66.0
Oil	12.29%	11.53%	93.7%
International	4.35	3.20	73.6
Domestic Reserves	3.93	4.52	115.0
Foreign Reserves	1.57	1.15	73.2
Refining & Distribution	1.07	1.34	125.2
Oil Service	1.38	1.32	95.7
Agriculture & Forest Products	6.07%	7.47%	123.1%
Forest Products	0.35	1.07	305.7
Paper	2.16	3.16	146.3
Agriculture, Food	3.56	3.24	91.0
Food, Tobacco, & Packaged Goods	5.26%	6.38%	121.3%
Beverages	0.86	0.42	48.8
Liquor	0.90	1.16	128.9
Tobacco	1.02	1.84	180.4
Soaps	1.11	1.80	162.2
Cosmetics	0.59	0.59	100.0
Retail Food	0.78	0.57	73.1
Other Consumer	11.34%	9.42%	83.1%
Nonfood Retail	4.72	5.51	116.7
Apparel & Textiles	0.60	0.36	60.0
Photographic & Optical	1.16	0.88	75.9
Motor Vehicles	3.36	1.11	33.0
Non-Auto Durables	0.91	1.20	131.9
Leisure & Luxury	0.59	0.36	61.0
Drugs & Health Care	6.48%	5.83%	90.0%
Drugs	4.62	4.10	88.7
Health Care	1.86	1.73	93.0

South Africa-Free Index Portfolio (June 30, 1986)

	S&P 500	Optimized Index	Relative
Publishing & Media	3.57%	3.83%	107.3%
Publishing	1.73	1.89	109.2
Media	1.84	1.94	105.4
Transport & Travel	4.20%	4.92%	117.1%
Hotels & Restaurants	1.76	1.97	111.9
Air Transport	0.74	1.09	147.3
Railroads	1.32	1.59	120.5
Trucking	0.30	0.18	60.0
Transport by Water	0.08	0.09	112.5
Intermediate Goods	8.17%	7.01%	85.8%
Chemicals	3.59	2.56	71.3
Tire & Rubber	0.26	0.31	119.2
Containers	0.20	0.16	80.0
Misc. Producers Goods	4.12	3.98	96.6
Capital Spending & Defense	16.93%	15.32%	90.5%
Business Machines	9.14	6.35	69.5
Electronics	2.74	3.81	139.1
Construction	1.17	1.36	116.2
Aerospace	3.46	3.63	104.9
Pollution Control	0.42	0.17	40.5
Utilities	13.75%	15.17%	110.3%
Electric	4.71	6.50	138.0
Gas	1.41	1.08	76.6
Telephone	7.63	7.59	99.5
Financial	7.77%	8.40%	108.1%
Banks	2.40	2.68	111.7
Thrift Institutions	0.25	0.11	44.0
Life Insurance	1.13	0.89	78.8
Other Insurance	2.27	3.34	147.1
Misc. Financial	1.72	1.38	80.2
Other	2.39%	1.48%	61.9%
Real Property	0.21	0.21	57.1
Services	1.21	0.43	35.5
Miscellaneous	0.97	0.93	95.9

the enlarged, purged universe. So, for example, the selection of larger capitalization companies within industry groups has modestly relieved the small-stock bias associated with South Africa-free portfolios. More significantly, a seeking of companies with stable earnings patterns has dramatically reduced the otherwise clear bias toward volatile companies. Comparable efforts have also increased the portfolio's weight in companies with foreign exposure from less than two-thirds of the full S&P 500 to a figure that is actually slightly above the whole index. The selection process has brought the beta of this South Africa-free index to exactly 1.00. And a seeking of financially sound companies within industry groups has also allowed the portfolio to cut the high financial leverage evident in the purged universes to a level approaching that of the 500. For all eleven investment characteristics, the optimized South Africa-free index portfolio shows an average deviation of 4.8 percentage points from the S&P 500 compared with an average deviation of 8.6 percentage points for the purged group of 358 stocks.

And as Table 9 shows, this optimized South Africa-free index portfolio is able to match the performance of the S&P 500 quite closely, even though half the capitalization of the 500 is disallowed under the South African exclusion. Over the whole five-and-one-half-year period of this simulation, the index port-

"Month by month, quarter by quarter, year by year, the index portfolio avoids the wide swings in relative performance that are so evident in the simply purged group."

folio averaged about 20 basis points a year ahead of the S&P 500. That is not really very different from the simply purged S&P for the whole period. What is significant is that month by month, quarter by quarter, year by year, the index portfolio avoids the wide swings in relative performance that are so evident in the simply purged group. Of course, this index portfolio, working as it is against a South Africa-free constraint, cannot match the close tracking of a straightforward, unconstrained index portfolio. Nonetheless, as a comparison of Tables 9 and 3 shows, this optimized portfolio has kept performance deviations well down. On a quarterly basis, the simply purged group has missed the full S&P by as much as 256 basis points, while the South Africa-free index holds the worst quarterly deviation to well below 200 basis points. On an average annual basis, the differences are even more telling. The purged group has missed by as much as 523 basis points in a given year, while the South Africa-free index has held that miss to only 232 basis points. On average, then, the absolute annual deviation of the simply purged group amounts to 216 basis points per year, while the South Africa-free index has an average deviation of only 82 basis points per year.

It is this kind of relative stability that recommends this optimized index over any simple exclusion of South Africa-affiliated companies from a stock universe. It is only by this kind of rigorous diversification and rebalancing of a purged universe that a portfolio can avoid the investment biases implicit in divestiture and provide stable and consis-

Table 8 **Comparison of Relative Portfolio**

	Purged S&P 500	Enlarged Universe South Africa-Free	Optimized Index
Investment Characteristics			
Market Capitalization	98.14%	96.16%	98.32%
Liquidity	99.24	93.20	92.44
Growth	104.11	105.41	98.60
Earnings Variation	108.44	114.08	102.82
Foreign Income	64.04	58.25	118.43
Labor Intensity	82.08	81.22	92.34
Beta	103.31	102.83	100.00
Price/Earnings Ratio	98.50	95.71	100.00
Price-to-Book Ratio	93.75	93.75	93.75
Financial Leverage	111.88	111.88	105.09
Yield	101.82	100.00	100.80
Industry Groups			
Metals & Mining	133.8%	124.5%	99.0%
Aluminum	187.2	127.7	170.2
Iron & Steel	170.6	150.0	108.8
Precious Metals	141.2	129.4	23.5
Coal & Uranium	105.7	105.7	86.8
Miscellaneous	88.7	122.6	66.0
Oil	99.1%	102.9%	93.7%
International	35.9	45.1	73.6
Domestic Reserves	121.9	119.6	115.0
Foreign Reserves	134.4	151.0	73.2
Refining & Distribution	153.3	182.2	125.2
Oil Service	150.7	121.0	95.7
Agriculture & Forest Products	116.6%	95.1%	123.1%
Forest Products	174.3	128.6	305.7
Paper	127.3	106.0	146.3
Agriculture, Food	104.5	85.1	91.0
Food, Tobacco & Packaged Goods	104.6%	103.4%	121.3%
Beverages	36.1	34.9	48.8
Liquor	122.2	101.1	128.9
Tobacco	98.0	140.2	180.4
Soaps	123.4	100.0	162.2
Cosmetics	47.5	35.6	100.0
Retail Food	184.6	189.7	73.1
Other Consumer	106.2%	86.7%	83.1%
Nonfood Retail	180.0	138.8	116.7
Apparel & Textiles	123.3	116.7	60.0
Photographic & Optical	14.7	16.4	75.9
Motor Vehicles	24.4	21.1	33.0
Non-Auto Durables	94.5	101.1	131.9
Leisure & Luxury	161.0	128.8	61.0

Characteristics, South Africa-Free (June 30, 1986)

	Purged S&P 500	Enlarged Universe South Africa-Free	Optimized Index
Drugs & Health Care	27.8%	34.9%	90.0%
Drugs	8.2	16.7	88.7
Health Care	76.3	80.1	93.0
Publishing & Media	86.0%	92.4%	107.3%
Publishing	117.3	120.8	109.2
Media	56.5	65.8	105.4
Transportation & Travel	161.0%	143.1%	117.1%
Hotels & Restaurants	145.5	129.6	111.9
Air Transport	141.9	148.7	147.3
Railroads	184.9	125.8	120.5
Trucking	186.7	193.3	60.0
Transportation by Water	187.5	487.5	112.5
Intermediate Goods	53.6%	61.3%	85.8%
Chemicals	47.1	59.6	71.3
Tire & Rubber	26.9	69.2	119.2
Containers	45.0	50.0	80.0
Misc. Producers Goods	61.4	62.9	96.6
Capital Spending & Defense	57.8%	48.4%	90.5%
Business Machines	25.4	23.0	69.5
Electronics	90.2	82.5	139.1
Construction	145.3	121.4	116.2
Aerospace	73.1	55.8	104.9
Pollution Control	183.3	114.3	40.5
Utilities	173.4%	162.6%	110.3%
Electric	187.1	220.6	138.0
Gas	170.9	187.2	76.6
Telephone	165.4	122.3	99.5
Financial	109.8%	166.9%	108.1%
Banks	91.7	234.2	111.7
Thrift Institutions	184.0	196.0	44.0
Life Insurance	148.7	150.4	78.8
Other Insurance	135.7	131.7	147.1
Misc. Financial	64.5	126.2	80.2
Other	97.1%	142.3%	61.9%
Real Property	181.0	228.6	57.1
Services	90.9	166.1	35.5
Miscellaneous	86.6	93.8	95.9

tent returns relative to the S&P 500, which, after all, is the equity benchmark of the entire investment community.

Conclusion

This discussion has made no effort to consider the moral, legal, political or administrative aspects of the divestiture question. These are well discussed elsewhere and really are not the province of an investment advisor (except perhaps in his role as a citizen). Rather, the investment advisor's job is to work within the constraints imposed by the client and inform the client of the likely investment impact of those constraints. From the advisor's perspective, divestiture makes the job more complex than it might be otherwise. But from an investment standpoint, it is no different from coping with an extreme risk aversion on a client's part or the need for a large cash flow, or any number of a host of less morally laden constraints that a client might impose on a portfolio. The important point is that all parties know what to expect, given the constraints.

This essay has shown that the client can in fact expect performance comparable to that of the S&P 500 even with the most severe of South Africa-free constraints. As in the case of any portfolio, except a straight index, relative performance will fluctuate from quarter to quarter. But, as should be clear from this analysis, even over a relatively short horizon of 12 to 18 months, the returns of the 500 are a reasonable standard for a South Africa-free portfolio. And an individual or plan can still expect an ac-

Table 9

Relative Performance of the S&P Index vs. the South Africa-Free Index Fund (December 31, 1980 through June 30, 1986)

	S&P 500			South Africa-Free Index Fund		
	Quarterly Return	Annual Return	Cumulative Return	Quarterly Return	Annual Return	Cumulative Return
1981 1st Qtr	1.4%		1.4%	1.8%		1.8%
2nd Qtr	−2.3%		−1.0%	−1.9%		−0.1%
3rd Qtr	−10.3%		−11.2%	−8.6%		−8.7%
4th Qtr	6.9%	−5.1%	−5.1%	6.5%	−2.8%	−2.8%
1982 1st Qtr	−7.1%		−11.8%	−7.1%		−9.7%
2nd Qtr	−0.5%		−12.2%	1.0%		−8.8%
3rd Qtr	11.4%		−2.2%	11.2%		1.4%
4th Qtr	18.1%	21.7%	15.5%	16.7%	21.8%	18.4%
1983 1st Qtr	10.0%		27.1%	11.1%		31.5%
2nd Qtr	11.0%		41.1%	10.1%		44.8%
3rd Qtr	−0.2%		40.8%	−1.6%		42.4%
4th Qtr	0.3%	22.2%	41.2%	0.9%	21.4%	43.7%
1984 1st Qtr	−2.4%		37.8%	−1.5%		41.5%
2nd Qtr	−2.6%		34.2%	−2.5%		37.9%
3rd Qtr	9.6%		47.2%	8.2%		49.2%
4th Qtr	1.8%	6.1%	49.7%	1.2%	5.1%	51.1%
1985 1st Qtr	9.3%		63.6%	8.9%		64.5%
2nd Qtr	7.3%		75.5%	7.1%		76.2%
3rd Qtr	−4.2%		68.1%	−2.9%		71.0%
4th Qtr	17.1%	31.4%	96.8%	16.1%	31.4%	98.5%
1986 1st Qtr	14.0%		124.3%	13.6%		125.4%
2nd Qtr	5.8%	20.5%*	137.3%	6.1%	20.5%*	139.2%

*Six month return.

tive manager to earn his fee by outperforming the 500, even given the divestiture constraint. The cost is less in performance than in a rigorous application of the principles of diversification. □

As we went to press, several major corporations, including Coca-Cola, General Motors and IBM, announced that they planned to withdraw from doing business in South Africa. The author has added the following postscript to his article:

Since this analysis was completed, several prominent companies have indicated an intention to pull out of South Africa. In a strict sense, their gesture is inadequate, since they will maintain a sales and service presence in that country. Nonetheless, for the sake of a complete picture, we revisited the analysis, including these firms in the South Africa-free subset.

Their inclusion in the permissible group does in fact move that group closer to the character of the whole S&P 500. There is a greater relative presence in autos and business machines than there was before. Even so, the biases remain the same (if a bit less intense). Thus autos, business machines, technology, etc. remain underweighted in the purged group as they were before the recent announcements. Perhaps more importantly, the investment biases remain much as they were, although a bit less extreme. For example, this more recent South Africe-free group has a lower beta than the original set—102.2 vs. 103.3—but it is still high relative to the entire S&P 500. Similarly, this new sample still shows more variable earnings than the whole index, more financial leverage, much less foreign income, and less labor intensity.

Of course, being slightly closer to the index than the old sample was, this group will tend to track the whole S&P 500 more closely than the old sample would be expected to do. But still, without optimized sampling to ameliorate differences, the continued biases suggest a pattern of over- and undershooting similar to that exhibited by the old South Africa-free group.

Milton J. Ezrati is senior vice president of Manufacturers Hanover Investment Corporation, New York, where he is director of research and economist. He has worked as an economist throughout his career, serving in that capacity with Citibank, The Chase Manhattan Bank and Lionel D. Edie & Company (which was absorbed into Manufacturers Hanover Trust Company in 1981). He holds a B.A. from the State University of New York at Buffalo and a Master of Social Science in economics from the University of Birmingham, England.

1986 Directory of Master and Directed Trust Services

The following *Pension World* Directory is a listing of firms indicating that they offer master and/or directed trusts. It is not an exhaustive list, but rather an identification of the firms that responded in full to *Pension World's* questionnaire.

During August 1986, a questionnaire was mailed to 100 U.S. banks and trust companies. Of the responses received, 56 indicated that they offer master and/or directed trusts. This number is smaller than last year's responses (76). A number of last year's respondents indicated that they no longer offer such services; in some cases, two banks combined in the past year and consolidated two master trust operations into one. Our research suggests that banks which have previously made substantial commitments to the master trust business are continuing and even increasing those commitments, while few, if any, banks are starting new master trust operations.

Master Trust continues to be defined in individual ways by the banks and trust companies offering this service. A technical definition, according to several authorities in the corporate trust industry, is a trust in which *multiple* plans of the same company control or share investment experience under *one trust document*. In working terms, however, some of the definitions used for master trust include: 1) an arrangement under one trust agreement that includes multiple money managers, one of which may or may not be the trustee; 2) a pooling of one sponsor's assets, which may include multiple managers and *one* or more plans, under one trust document; or 3) a pooling of directed trusts.

Similarly, several different definitions are given to the term *directed trust*. The general definition is a trust under which the trustee has less than full managerial authority of the plan sponsor's assets. However, the term is often used synonymously with *directed portfolio*, in which a manager has the authority to direct only those investments within the particular portion of assets under his direct control; and it is sometimes associated with *general trust*, in which a separate trust agreement is written for that portion of assets under the manager's control.

Figures gleaned in the following survey are not always comparable, although *Pension World* has taken every precaution to present these data in their most accurate form. All information in the directory was provided by the banks and trust companies listed. *Pension World* appreciates the efforts of those who completed and returned the questionnaires and hopes that each year's directory will continue to be more comprehensive.

AMERICAN NATIONAL BANK & TRUST COMPANY
5th & Minnesota Streets
St. Paul, MN 55101
Contact: William E. Burmeister, assistant vice president, (612) 298-6274

Number of separate master trust clients: 0
Number of directed trust clients: 15
Master trust assets: 0
Directed trust assets: $50 million
Custodial employee benefit assets: $1.2 million
Total employee benefit assets: $127 million
Number of separate portfolios: 20
Average number of accounts per account supervisor: 100 (directed and nondirected)
Average number of portfolios per investment manager contact: 20
Accounting system utilized: Contractual settlement date
Fail float credit provided: No
Short-term instruments used: Federated Master Trust
Date short-term instruments credited: First business day of month
Timeliness of reporting package: Mailed on or before 7 business days following month end
Services provided: Performance measurement, participant recordkeeping, ERISA disclosure assistance, benefit disbursement
Policy for crediting dividends and interest: Paid on scheduled payment date
Fee structure: Based on combination of asset value and individual services

AMERITRUST COMPANY
900 Euclid Avenue
P.O. Box 5937
Cleveland, OH 44101
Contact: Gary W. Queen, senior vice president, (216) 687-4089

Number of separate master trust clients: 38
Number of directed trust clients: 23
Master trust assets: $5.166 billion
Directed trust assets: $530 million
Custodial employee benefit assets: 0
Total employee benefit assets: $10.4 billion
Number of separate portfolios: 117
Average number of accounts per account supervisor: 6
Average number of portfolios per investment manager contact: 12
Accounting system utilized: Trade date (full accrual), contractual settlement date with pending adjustment, actual delivery date
Fail float credit provided: Yes
Short-term instruments used: STIF, variable demand notes, T-bills, commercial paper, Eurodollar CDs, CDs & financial reserve fund
Date short-term interest credited: 5th business day
Timeliness of reporting package: 3-5 business days after month end
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, TUCS, AmeriScan (on-line client inquiry), investment management services
Policy for crediting dividends and interest: On payable date in good funds
Fee structure: Based on combination of asset value and individual services

BANCOKLAHOMA TRUST COMPANY
Bank of Oklahoma Tower-10th Floor
P.O. Box 2300
Tulsa, OK 74192
Contact: Linda W. Parish, vice president & trust officer, (918) 588-6763

Number of separate master trust clients: 4
Number of directed trust clients: 28
Master trust assets: $300 million
Directed trust assets: $377 million
Custodial employee benefit assets: $240 million
Total employee benefit assets: $2.2 billion
Number of separate portfolios: 60
Average number of accounts per account supervisor: 11
Average number of portfolios per investment manager contact: 2
Accounting system utilized: Trade date (full accrual), contractual settlement date with pending adjustment (if desired), contractual settlement date, actual delivery date
Fail float credit provided: No
Short-term instruments used: Certificates of deposit, Treasury bills, high-grade commercial paper, and various short-term money market funds
Date short-term interest credited: Compounded daily/credit monthly
Timeliness of reporting package: Settlement date reporting is available to the client by the fifth business day. Trade date reporting is available by the 25th calendar day. A portfolio review reflecting current pricing is available on any business day of the month
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, special equity (growth) investment strategy, hedged equity investment strategy, managed GIC portfolios
Policy for crediting dividends and interest: Posted on payable date in clearinghouse funds for corporate issues. Posted on payable date in Fed funds on most government or government-backed issues. Mortgage-related government-backed issues post principal and income on payable date + 1, in clearinghouse funds. Purchase and sale transactions are posted on contractual settlement date in either Fed funds or clearinghouse funds depending on the nature of the security. Funds are available to the client if the form is received by the bank. Fed funds are available on the same business day. Clearinghouse funds are available on the first business day following posting
Fee structure: Based on combination of asset value and individual services

BANK IV WICHITA
Fourth Financial Center
P.O. Box 4
Wichita, KS 67201-0004
Contact: Roger A. Ramseyer, securities management marketing representative, (316) 261-4555

Number of separate master trust clients: 1
Number of directed trust clients: 18
Master trust assets: $78 million
Directed trust assets: $218 million
Custodial employee benefit assets: 0
Total employee benefit assets: $299 million
Number of separate portfolios: 35
Average number of accounts per account supervisor: 9
Average number of portfolios per investment manager contact: 9
Accounting system utilized: Contractual settlement date
Fail float credit provided: Not reported
Short-term instruments used: Goldman Sachs institutional liquid assets prime obligations portfolio
Date short-term interest credited: First of each month
Timeliness of reporting package: All accounting and investment reviews mailed within 30 days following end of cycle
Services provided: Performance measurement, portfolio analysis, portfolio review, benefit disbursement
Policy for crediting dividends and interest: On payable date + 1; direct participant with Depository Trust Co.
Fee structure: Based on individual services performed

BANK OF AMERICA NT & SA
555 California Street
San Francisco, CA 94104
Contact: John P. Sheehy, senior vice president, (415) 622-9568

Number of separate master trust clients: 40
Number of directed trust clients: 420
Master trust assets: $17.6 billion
Directed trust assets: $11.8 billion
Custodial employee benefit assets: N/A
Total employee benefit assets: $29.7 billion (including $300 million in bank-managed funds)
Number of separate portfolios: 2700
Average number of accounts per account supervisor: 9
Average number of portfolios per investment manager contact: N/A
Accounting system utilized: Trade date (full accrual), contractual settlement date with pending adjustment, contractual settlement date
Fail float credit provided: It can be
Short-term instruments used: STIF
Date short-term interest credited: First day of following month
Timeliness of reporting package: 5-10 business days for monthly and quarterly reports; 20-30 business days for annual reports
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, global custody
Policy for crediting dividends and interest: On payable date, credited to STIF
Fee structure: Based on combination of asset value and individual services

THE BANK OF NEW YORK
48 Wall Street
New York, NY 10015
Contact: Robert Darbee, vice president, (212) 530-1354

Number of separate master trust clients: 80
Number of directed trust clients: Not reported
Master trust assets: $26.3 billion
Directed trust assets: Not reported
Custodial employee benefit assets: $18.1 billion
Total employee benefit assets: $44.4 billion
Number of separate portfolios: Not reported
Average number of accounts per account supervisor: 5-10
Average number of portfolios per investment manager contact: Not reported
Accounting system utilized: Trade date (full accrual), contractual settlement date with pending adjustment, contractual settlement date, actual delivery date
Fail float credit provided: Yes
Short-term instruments used: STIF, domestic and foreign master notes
Date short-term interest credited: Daily

Timeliness of reporting package: 2-5 days
Services provided: Performance measurement, portfolio analysis, portfolio review, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, market inventory fund, beneficial interest reporting system, global custody, FIRST (on-line reporting system), DIAL-IN, options/futures administration, benefit payment system
Policy for crediting dividends and interest: In Fed funds on payable date
Fee structure: Based on combination of asset value and individual services

BANK ONE, DAYTON, NA

Kettering Tower
Dayton, OH 45401
Contact: Donald G. Middendorf, vice president, (513) 449-8659

Number of separate master trust clients: 7
Number of directed trust clients: 23
Master trust assets: $375 million
Directed trust assets: $360 million
Custodial employee benefit assets: $50 million
Total employee benefit assets: $550 million
Number of separate portfolios: 70
Average number of accounts per account supervisor: 20
Average number of portfolios per investment manager contact: N/A
Accounting system utilized: Contractual settlement date with pending adjustment
Fail float credit provided: Yes, master trust only
Short-term instruments used: Commercial paper, T-bills, STIF
Date short-term interest credited: Month end
Timeliness of reporting package: Interim 3-5 business days
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, ERISA disclosure assistance, benefit disbursement, index fund, zero benefit disbursement for Master Trust, auto daily sweep of funds in excess of $1.00
Policy for crediting dividends and interest: On payable date; all funds collected, governments, agencies, STIF clearinghouse funds, etc.
Fee structure: Based on combination of asset value and individual services

BANKERS TRUST COMPANY

280 Park Avenue, 8 West
New York, NY 10017
Contact: Carter P. Reynolds, vice president, (212) 850-2089

Number of separate master trust clients: 123
Number of directed trust clients: 100
Master trust assets: $77.5 billion
Directed trust assets: $1.4 billion
Custodial employee benefit assets: $20.0 billion
Total employee benefit assets: $140.5 billion
Number of separate portfolios: 1,223
Average number of accounts per account supervisor: 12
Average number of portfolios per investment manager contact: 80
Accounting system utilized: Trade date (full accrual), contractual settlement date with pending adjustment; contractual settlement date, actual delivery date
Fail float credit provided: Yes
Short-term instruments used: Master notes and commercial paper of the major finance companies, CDs of major U.S. money-center banks, Euro-dollar CDs and time deposits issued by these same banks, CDs issued by major European and Japaneses banks from their New York agencies, repurchase agreements collateralized by U.S. Treasury or federal agency obligations, repurchase agreements collateralized by the Canadian or foreign issuers mentioned above, and banker's acceptances
Date short-term interest credited: First business day of each month
Timeliness of reporting package: Monthly/quarterly transaction statements available within three business days of period end. Monthly/quarterly accountings available 7-10 business days after month end
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, cash management, global custody, remote on-line access, consulting, active and passive investment services, cash projection, customized reporting, advisor services, options and futures processing, tax lot accounting, performance attribution
Policy for crediting dividends and interest: On payable date in Federal funds
Fee structure: Based on conbination of asset value and individual services

BISHOP TRUST COMPANY, LTD.

P.O. Box 2390
Honolulu, HI 96804
Contact: Daniel P. Zaehring, vice president & manager, employee benefits, (808) 523-2275

Number of separate master trust clients: 51
Number of directed trust clients: 263
Master trust assets: $115 million
Directed trust assets: $255 million
Custodial employee benefit assets: $255 million
Total employee benefit assets: $320 million
Number of separate portfolios: 261
Average number of accounts per account supervisor: 15 master - 48 directed
Average number of portfolios per investment manager contact: N/A
Accounting system utilized: Contractual settlement date with pending adjustment
Fail float credit provided: No
Short-term instruments used: Registered money market fund, T-Bills, CDs, commercial paper
Date short-term interest credited: accrued daily, paid on second working day of following month
Timeliness of reporting package: 3 working days transaction; 10 working days asset valuation and projections
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, ERISA disclosure assistance, benefit disbursement, plan administrator consulting and design
Policy for crediting dividends and interest: Pay date + 1 with good funds
Fee structure: Based on combination of asset value and individual services

BOSTON SAFE DEPOSIT AND TRUST COMPANY

One Boston Place
Boston, MA 02106
Contact: Norman R. Lubin, vice president, (617) 722-7314

Number of separate master trust clients: 40
Number of directed trust clients: 238
Master trust assets: $29.9 billion
Directed trust assets: $805 million
Custodial employee benefit assets: $11.4 billion
Total employee benefit assets: $12.1 billion
Number of separate portfolios: 807
Average number of accounts per account supervisor: 4
Average number of portfolios per investment manager contact: 11
Accounting system utilized: Trade date (full accrual), also maintain cash basis accounting system
Fail float credit provided: Yes, if bank is responsible for the fail. Cash is transferred on settlement date for all purchase trades
Short-term instruments used: STIF, reserve deposit account, active reserves, enhanced cash reserves, The Boston Company Cash Management Fund
Date short-term interest credited: Accrued daily and credited on the third business day of the following month
Timeliness of reporting package: 5 business days following period-end
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, market inventory fund, full accrual trade date accounting and recording; on-line access via P.C. (Master Workstation); global custody; options and futures processing; portfolio insurance; 401(k) capabilities; asset allocation; consulting services
Policy for crediting dividends and interest: Payable date for Fed funds; next business day following payable date for clearinghouse funds
Fee structure: Based on combination of asset value and individual services

CALIFORNIA FIRST BANK

530 B Street
San Diego, CA 92112
Contact: Piet Westerbeek III, vice president-business development, (619) 230-4504

Number of separate master trust clients: 0
Number of directed trust clients: 787
Master trust assets: 0
Directed trust assets: $666.4 million
Custodial employee benefit assets: $624.3 million
Total employee benefit assets: $1.5 billion
Number of separate portfolios: 1,474
Average number of accounts per account supervisor: 210
Average number of portfolios per investment manager contact: 20
Accounting system utilized: Contractual settlement date
Fail float credit provided: No
Short-term instruments used: Daily automatic cash sweep
Date short-term interest credited: Monthly
Timeliness of reporting package: 10 business days
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, market inventory fund, international equity investment fund, real estate equity fund
Policy for crediting dividends and interest: On payable date in cash for next day's investment
Fee structure: Based on combination of asset value and individual services

Continued on page 60

CENTERRE TRUST COMPANY OF ST. LOUIS
510 Locust Street
St. Louis, MO 63101
Contact: Richard W. Hibbs, vice president and director of employee benefit marketing, (314) 436-9265

Number of separate master trust clients: 8
Number of directed trust clients: N/A
Master trust assets: $1.4 billion
Directed trust assets: N/A
Custodial employee benefit assets: $2.7 billion
Total employee benefit assets: $4.0 billion
Number of separate portfolios: 87
Average number of accounts per account supervisor: 5
Average number of portfolios per investment manager contact: 26
Accounting system utilized: Trade date (full accrual), contractual settlement date with pending adjustment, contractual settlement date
Fail float credit provided: Yes
Short-term instruments used: In-house STIF
Date short-term interest credited: Second day following month end
Timeliness of reporting package: 5-7 working days
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund
Policy for crediting dividends and interest: On payable date; computer system credit for immediate investment
Fee structure: Based on combination of asset value and individual services

THE CHASE MANHATTAN BANK, N.A.
Global Securities Information and Pension Trust Group
1211 Avenue of the Americas, 30th floor
New York, NY 10036
Contact: John A. Sweeney, vice president, (212) 730-3008

Number of separate master trust clients: 97
Number of directed trust clients: 210
Master trust assets: $103 billion
Directed trust assets: $17 billion
Custodial employee benefit assets: $18 billion
Total employee benefit assets: $138 billion
Number of separate portfolios: 1250
Average number of accounts per account supervisor: 10
Average number of portfolios per investment manager contact: 35
Accounting system utilized: Trade date (full accrual), contractual settlement date with pending adjustment contractual settlement date
Fail float credit provided: Yes
Short-term instruments used: Domestic & International STIF, Master Notes, Money Market
Date short-term interest credited: Month-end
Timeliness of reporting package: On-line statements daily; monthly/quarterly statements 7 business days after period end; annual statement 30 to 45 business days after year end
Services provided: Performance measurement, portfolio analysis, portfolio review, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, market inventory fund, on-line accounting and reporting system, safekeeping, custody accounting, cash management, futures/options accounting, security lending
Policy for crediting dividends and interest: On payable date; interest in Fed funds, dividends in clearing house funds
Fee structure: Based on combination of asset value and individual services

CITIBANK, N.A.
153 East 53rd Street, 25th Floor, Zone 5
New York, NY 10043
Contact: Gregory J. di Pretoro, vice president, (212) 559-1523

Number of separate master trust clients: 41
Number of directed trust clients: 85
Master trust assets: $9.6 billion
Directed trust assets: $11.5 billion
Custodial employee benefit assets: $44.5 billion
Total employee benefit assets: $65.6 billion
Number of separate portfolios: 586
Average number of accounts per account supervisor: 7
Average number of portfolios per investment manager contact: 29
Accounting system utilized: Trade date (full accrual), contractual settlement date, actual delivery date
Fail float credit provided: Yes
Short-term instruments used: Citibank's commingled employee benefit trust liquid reserve fund, short term investment fund, demand notes, custom short term investment fund, individual money market instruments
Date short-term interest credited: Mid-month and end of month
Timeliness of reporting package: 5-7 business days following receipt of all information
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, dividend reinvestment program, Citicorp portfolio analyst, on-line flexible reporting and graphics, global custody
Policy for crediting dividends and interest: On payable date for Fed Funds; payable date + 1 for clearinghouse funds; in good funds immediately available for reinvestment
Fee structure: Based on individual services performed

THE CITIZENS AND SOUTHERN NATIONAL BANK
33 North Avenue, N.E.
P.O. Box 4114
Atlanta, GA 30302
Contact: Edgar R. Smith, vice president-sales, (404) 897-3083

Number of separate master trust clients: 30
Number of directed trust clients: 105
Master trust assets: $900 million
Directed trust assets: $600 million
Custodial employee benefit assets: $7.5 billion
Total employee benefit assets: $9 billion
Number of separate portfolios: 460
Average number of accounts per account supervisor: 125
Average number of portfolios per investment manager contact: 12
Accounting system utilized: Trade date (full accrual), contractual settlement date with pending adjustment, contractual settlement date, actual delivery date
Fail float credit provided: Yes
Short-term instruments used: Money market fund, Federated, VANS, cash management fund
Date short-term interest credited: On payable date
Timeliness of reporting package: Ten working days
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, international fund
Policy for crediting dividends and interest: On payable date; immediate credit to account
Fee structure: Based on combination of asset value and individual services

CITY NATIONAL BANK OF MIAMI
Trust Department
P.O. Box 025611
Miami, FL 33102-5611
Contact: David Buznego, vice president & trust officer, (305) 577-7248

Number of separate master trust clients: 4
Number of directed trust clients: 2
Master trust assets: $14.9 million
Directed trust assets: $14.7 million
Custodial employee benefit assets: $14.5 million
Total employee benefit assets: $14.9 million
Number of separate portfolios: 4
Average number of accounts per account supervisor: 15
Average number of portfolios per investment manager contact: 15
Accounting system utilized: Actual delivery date
Fail float credit provided: No
Short-term instruments used: No
Date short-term interest credited: On settlement
Timeliness of reporting package: Within 30 days after closing date
Services provided: Participant recordkeeping, ERISA disclosure assistance, benefit disbursement, market inventory fund
Policy for crediting dividends and interest: When due; credits automatically posted on due date
Fee structure: Based on combination of asset value and individual services

CONNECTICUT BANK & TRUST COMPANY
One Constitution Plaza
Hartford, CT 06115
Contact: Paul W. Stadler, vice president, (203) 244-5385

Number of separate master trust clients: 13
Number of directed trust clients: 70
Master trust assets: $446 million
Directed trust assets: $793 million
Custodial employee benefit assets: $18 million
Total employee benefit assets: $1.7 billion
Number of separate portfolios: 105
Average number of accounts per account supervisor: 10
Average number of portfolios per investment manager contact: 21
Accounting system utilized: Contractual settlement date with pending adjustment
Fail float credit provided: Yes
Short-term instruments used: Commingled short term, repurchase agreements, variable interest rate notes
Date short-term interest credited: Monthly
Timeliness of reporting package: 2-20 business days, depending upon nature of report
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, South Africa free portfolios available
Policy for crediting dividends and interest: On payable date; in Fed funds for Fed funds, clearinghouse for clearinghouse funds
Fee structure: Based on combination of asset value and individual services

THE CONNECTICUT NATIONAL BANK
777 Main Street
Hartford, CT 06115
Contact: Stuart I. Repp, senior vice president, (203) 728-4699

Number of separate master trust clients: 15

Number of directed trust clients: 79
Master trust assets: $1.2 billion
Directed trust assets: $8.3 million
Custodial employee benefit assets: Included in master and directed trust asset values
Total employee benefit assets: $3.5 billion
Number of separate portfolios: 125
Average number of accounts per account supervisor: 10
Average number of portfolios per investment manager contact: 12
Accounting system utilized: Contractual settlement date with pending adjustment
Fail float credit provided: No
Short-term instruments used: Own STIFs and VANs
Date short-term interest credited: Last day of month
Timeliness of reporting package: Depending on package 2 to 7 business days
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, ERISA disclosure assistance, benefit disbursement
Policy for crediting dividends and interest: On payable date in good funds
Fee structure: Based on combination of asset value and individual services

CONTINENTAL BANK

Trust and Investment Services
30 North LaSalle Street
Chicago, IL 60697
Contact: Christopher S. Ross, second vice president, (312) 828-3560

Number of separate master trust clients: 41
Number of directed trust clients: 128
Master trust assets: $14.9 million
Directed trust assets: $650 million
Custodial employee benefit assets: N/A
Total employee benefit assets: $15.5 billion
Number of separate portfolios: N/A
Average number of accounts per account supervisor: 12
Average number of portfolios per investment manager contact: N/A
Accounting system utilized: Trade date (full accrual)
Fail float credit provided: Yes
Short-term instruments used: Continental Bank's STIF or others as directed by client or manager
Date short-term interest credited: Second business day
Timeliness of reporting package: Cash statements, second business day; asset list, sixth business day
Services provided: Performance measurement, portfolio analysis portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, global custody, on-line access to data, flexible reporting, electronic mail system
Policy for crediting dividends and interest: On payable date in Fed funds
Fee structure: Based on combination of asset value and individual services

FIDELITY BANK, N.A.

Broad & Walnut Streets
Philadelphia, PA 19109
Contact: Eileen Fadden, senior vice president, (215) 496-4195

Number of separate master trust clients: 3
Number of directed trust clients: 24
Master trust assets: $604.1 million
Directed trust assets: $239.3 million
Custodial employee benefit assets: $244.5 million
Total employee benefit assets: $2.1 billion
Number of separate portfolios: 110
Average number of accounts per account supervisor: 7
Average number of portfolios per investment manager contact: 4
Accounting system utilized: Trade date (full accrual)
Fail float credit provided: No
Short-term instruments used: In-house short term investment fund or Federated Fund B
Date short-term interest credited: Approximately 10th of month
Timeliness of reporting package: Within 120 days of plan year end
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, ERISA disclosure assistance, benefit disbursement
Policy for crediting dividends and interest: On pay date
Fee structure: Based on combination of asset value and individual services

FIRST INTERSTATE BANK, LTD.

707 Wilshire Blvd.
Los Angeles, CA 90017
Contact: John Mason, vice president-institutional sales & marketing, (213) 614-3133

Number of separate master trust clients: 20
Number of directed trust clients: 254
Master trust assets: $3 billion
Directed trust assets: $14.3 billion
Custodial employee benefit assets: $1 billion
Total employee benefit assets: $18.3 billion
Number of separate portfolios: 1200
Average number of accounts per account supervisor: 45
Average number of portfolios per investment manager contact: 30-40
Accounting system utilized: Contractual settlement date with pending adjustment
Fail float credit provided: Yes
Short-term instruments used: Short-term investment fund
Date short-term interest credited: First week following end of month
Timeliness of reporting package: No later than 10 working days following month end
Services provided: Performance measurement, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund
Policy for crediting dividends and interest: From date payable
Fee structure: Based on combination of asset value and individual services

FIRST INTERSTATE BANK OF OREGON, N.A.

P.O. Box 2971
Portland, OR 97208
Contact: Rick Meigs, vice president, (503) 225-2484

Number of separate master trust clients: 23
Number of directed trust clients: 34
Master trust assets: $4.2 billion
Directed trust assets: $302 million
Custodial employee benefit assets: N/A
Total employee benefit assets: $5.4 billion
Number of separate portfolios: 139
Average number of accounts per account supervisor: 58
Average number of portfolios per investment manager contact: 1.4
Accounting system utilized: Trade date (full accrual), contractual settlement date with pending adjustment, contractual settlement date
Fail float credit provided: No
Short-term instruments used: A variety of high yield institutions-only Money Market Funds
Date short-term interest credited: Last day of month
Timeliness of reporting package: Within five business days
Services provided: Performance measurement, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, on-line access, cash management, global custody, multicurrency accounting, options & futures processing, customized reporting
Policy for crediting dividends and interest: On payable date in Fed funds
Fee structure: Based on combination of asset value and individual services

FIRST INTERSTATE BANK OF UTAH, N.A.

170 South Main Street
P.O. Box 30169
Salt Lake City, UT 84142
Contact: Rod R. Cushing, vice president, (801) 484-8945

Number of separate master trust clients: 31
Number of directed trust clients: 47
Master trust assets: $156.6 million
Directed trust assets: $231.4 million
Custodial employee benefit assets: $110.4 million
Total employee benefit assets: $390.3 million
Number of separate portfolios: 96
Average number of accounts per account supervisor: 48
Average number of portfolios per investment manager contact: 45
Accounting system utilized: Contractual settlement date
Fail float credit provided: Yes
Short-term instruments used: Various short term investment funds, commercial paper and Treasury bills
Date short-term interest credited: First business day of month
Timeliness of reporting package: 5-10 business days
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, ERISA disclosure assistance, benefit disbursement, plan design, IRS plan qualification, computer on-line data access, full income and expense accrual accounting, automated daily sweep of cash to STIF investment
Policy for crediting dividends and interest: On payable date through internal suspense
Fee structure: Based on combination of asset value and individual services

FIRST INTERSTATE BANK OF WASHINGTON, N.A.

Trust Division
P.O. Box 21927
Seattle, WA 98111
Contact: Lawrence T. Divers, vice president & trust officer, (206) 343-8346

Number of separate master trust clients: 0
Number of directed trust clients: 250
Master trust assets: 0
Directed trust assets: $1.4 billion
Custodial employee benefit assets: $857.4 million
Total employee benefit assets: $1.4 billion
Number of separate portfolios: N/A
Average number of accounts per account supervisor: N/A

Average number of portfolios per investment manager contact: N/A
Accounting system utilized: Trade date (full accrual)
Fail float credit provided: Yes
Short-term instruments used: In-house short-term investment fund, federated master trust, federated intermediated
Date short-term interest credited: N/A
Timeliness of reporting package: 10 working days after month end
Services provided: Performance measurement, participant recordkeeping, securities lending, cash management and lockbox services
Policy for crediting dividends and interest: On payable date
Fee structure: Based on combination of asset value and individual services

FIRST NATIONAL BANK & TRUST COMPANY OF TULSA

P.O. Box One
Tulsa, Ok 74193
Contact: Richard A. Moser, vice president & trust officer, (918) 586-5661

Number of separate master trust clients: 6
Number of directed trust clients: 32
Master trust assets: $96.4 million
Directed trust assets: $168.3 million
Custodial employee benefit assets: $300 million
Total employee benefit assets: $564.7 million
Number of separate portfolios: 38
Average number of accounts per account supervisor: 9
Average number of portfolios per investment manager contact: 7
Accounting system utilized: Trade date (full accrual)
Fail float credit provided: Yes
Short-term instruments utilized: Short term inv. company, Dreyfus Money Market, Federated U.S. Treasury obligations, ILA Govt., Shearson Temp. Fund
Date short-term interest credited: First & second business day following month end
Timeliness of reporting package: By 15th business day
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, ERISA disclosure assistance, benefit disbursement
Policy for crediting dividends and interest: On payable date in good funds
Fee structure: Based on combination of asset value and individual services

FIRST PENNSYLVANIA BANK N.A.

Packard Building, Third Floor
Philadelphia, PA 19101
Contact: James F. McHale, senior vice president, (215) 786-7946

Number of separate master trust clients: 17
Number of directed trust clients: 63
Master trust assets: $3.6 billion
Directed trust assets: $850 million
Custodial employee benefit assets: $21.5 billion
Total employee benefit assets: $26 billion
Number of separate portfolios: 150
Average number of accounts per account supervisor: 20
Average number of portfolios per investment manager contact: 50
Accounting system utilized: Trade date (full accrual)
Fail float credit provided: Yes
Short-term instruments used: Government Secured Master Repo Account
Date short-term interest credited: monthly
Timeliness of reporting package: 10 working days
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, global custody
Policy for crediting dividends and interest: On payable date in clearinghouse funds on equities, corporates, and municipals. Fed funds on government issues
Fee structure: Based on combination of asset value and individual services

FIRST SECURITY BANK OF UTAH, N.A.

79 South Main Street
Salt Lake City, UT 84111
Contact: Patricia A. Richards, vice president, (801) 350-5562

Number of separate master trust clients: 5
Number of directed trust clients: 6
Master trust assets: $236.6 million
Directed trust assets: $16.7 million
Custodial employee benefit assets: $13.3 million
Total employee benefit assets: $493.1 million
Number of separate portfolios: 35
Average number of accounts per account supervisor: 17
Average number of portfolios per investment manager contact: 2.7
Accounting system utilized: Contractual settlement date
Fail float credit provided: No
Short-term instruments used: Federated funds, Shearson Temp. Fund, others at direction of manager
Date short-term interest credited: Second business day
Timeliness of reporting package: 6 to 8 business days
Services provided: Participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund
Policy for crediting dividends and interest: On payable date; immediately available funds
Fee structure: Based on combination of asset value and individual services

FIRST TRUST CO., INC.

180 East Fifth Street
Saint Paul, MN 55101
Contact: William D. Bensman, vice president, (612) 223-7422

Number of separate master trust clients: 26
Number of directed trust clients: 62
Master trust assets: $4.1 billion
Directed trust assets: $630 million
Custodial employee benefit assets: $2.5 billion
Total employee benefit assets: $7.2 billion
Number of separate portfolios: 93
Average number of accounts per account supervisor: 4
Average number of portfolios per investment manager contact: n/a
Accounting system utilized: Trade date (full income accrual)
Fail float credit provided: Yes
Short-term instruments used: First Trust's short term investment fund, Saint Paul Money Fund, Shearson Temp. Fund and Federated Master Trust
Date short-term interest credited: First of the month
Timeliness of reporting package: Complete accountings ten business days after the end of the period
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, super STIF, index option overwriting
Policy for crediting dividends and interest: On payable date; dividends and interest are credited on payable date. Fed funds are invested same day and clearinghouse funds are invested payable date + 1
Fee structure: Based on combination of asset value and individual services

FIRST WACHOVIA

P.O. Box 3099
Winston-Salem, NC 27150
Contact: Jane B. Fisher, vice president, (919) 770-6348

Number of separate master trust clients: 53
Number of directed trust clients: 136
Master trust assets: $23.4 billion
Directed trust assets: $1.6 billion
Custodial employee benefit assets: $3.8 billion
Total employee benefit assets: $30.1 billion
Number of separate portfolios: 500
Average number of accounts per account supervisor: 8
Average number of portfolios per investment manager contact: 17
Accounting system utilized: Contractual settlement date with pending adjustment, contractual settlement date
Fail float credit provided: Yes
Short-term instruments used: STIF Funds, demand notes, repos, individual managed short term funds and treasury notes
Date short-term interest credited: First
Timeliness of reporting package: 10 business days or less
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, global custody, options and futures processing, cash management, asset allocation consulting, Wilshire Trust Universe Comparison Service, PAYSOP administration, 401(k) consulting
Policy for crediting dividends and interest: On payable date in Fed funds
Fee structure: Based on combination of asset value and individual services

FIRST WISCONSIN TRUST COMPANY

777 E. Wisconsin Avenue
P.O. Box 2054
Milwaukee, WI 53201
Contact: Anthony M. Rood, first vice president, (414) 765-4444

Number of separate master trust clients: 33
Number of directed trust clients: 232
Master trust assets: $2.1 billion
Directed trust assets: $1.2 billion
Custodial employee benefit assets: $1.5 billion
Total employee benefit assets: $1.6 billion
Number of separate portfolios: 850
Average number of accounts per account supervisor: 15
Average number of portfolios per investment manager contact: 40
Accounting system utilized: Trade date with full income accrual
Fail float credit provided: Yes
Short-term instruments used: Short-term income fund and variable demand notes
Date short-term interest credited: Fifth business day of the month

Timeliness of reporting package: Financial transactions on the second business day of the month; list of assets indicating both cost and market value on the third business day of the month
Services provided: Performance measurement, portfolio analysis, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, bond immunization, bond dedication, equity and fixed income indexing, real estate and technology funds
Policy for crediting dividends and interest: On payment date in good funds
Fee structure: Based on combination of asset value and individual services

FLORIDA NATIONAL BANK
225 Water Street
Jacksonville, FL 32201-0689
Contact: Robert E. Mitchell, vice president, (904) 359-5209

Number of separate master trust clients: 3
Number of directed trust clients: 5
Master trust assets: $50 million
Directed trust assets: $40 million
Custodial employee benefit assets: $600 million
Total employee benefit assets: $780 million
Number of separate portfolios: 13 (master trust and directed only)
Average number of accounts per account supervisor: 75 (average of all employee benefit accounts)
Average number of portfolios per investment manager contact: 30 (average of all employee benefit accounts)
Accounting system utilized: Contractual settlement date with pending adjustment
Fail float credit provided: No
Short-term instruments used: Federated Government Fund, U.S. Treasury Fund, Shearson Temp. Fund, Shearson Fed Fund, Florida National Bank-special deposit, asset investment-short term investment company fund, asset investment-Treasury fund
Date short-term interest credited: First business day
Timeliness of reporting package: 10 days after accounting period
Services provided: Portfolio analysis, portfolio review, participant recordkeeping, securities lending, benefit disbursement, stable value investing, GIC contract
Policy for crediting dividends and interest: Payable date or day after
Fee structure: Based on combination of asset value and individual services

HT INVESTORS, INC.
321 South Main Street
Providence, RI 02903
Contact: J. Richard Schroder, vice president-marketing director, (401) 276-6100

Number of separate master trust clients: 10
Number of directed trust clients: 19
Master trust assets: $476.3 million
Directed trust assets: $1.1 billion
Custodial employee benefit assets: $52.1 million
Total employee benefit assets: $2.0 billion
Number of separate portfolios: 97
Average number of accounts per account supervisor: N/A
Average number of portfolios per investment manager contact: N/A
Accounting system utilized: Actual delivery date with pending adjustment
Fail float credit provided: No

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(617) 685-5400

Short-term instruments used: Shearson Lehman Brothers Inc. Temp. Fund
Date short-term interest credited: Accrued daily/credited on first business day of month
Timeliness of reporting package: Cash statements-second business day, all others 5th-7th business day
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, ERISA disclosure assistance, benefit disbursement, options and futures processing, 401(k) capabilities, plan accounting, fund accounting
Policy for crediting dividends and interest: Payable date for federal funds; next business day following payable date for clearinghouse funds
Fee structure: Based on combination of asset value and individual services

HARRIS TRUST AND SAVINGS BANK

111 West Monroe Street
Chicago, IL 60638
Contact: Walter J. Kowalczyk, vice president, (312) 461-7625

Number of separate master trust clients: 58
Number of directed trust clients: 217
Master trust assets: $30 billion
Directed trust assets: $7.5 billion
Custodial employee benefit assets: $8 billion
Total employee benefit assets: $45.5 billion
Number of separate portfolios: 700
Average number of accounts per account supervisor: 8
Average number of portfolios per investment manager contact: 70
Accounting system utilized: Trade date (full accrual)
Fail float credit provided: Yes
Short-term instruments used: STIF, commercial paper, certificates of deposit (domestic and Euro), bankers acceptances, U.S. government and agency issues, repurchase agreements, demand notes
Date short-term interest credited: Third or fourth business day of the following month
Timeliness of reporting package: Monthly transactions and assets, 2 to 7 business days; monthly and annual audited financial summaries with ERISA reports and plan accounting, 12 to 15 business days
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, market inventory fund, Trust Universe Comparison Service, options/futures accounting, global custody, on-line accounting and analytics with download capability, automated daily sweep of cash, automated cash management
Policy for crediting dividends and interest: On payable date in good funds
Fee structure: Based on combination of asset value and individual services

THE INTERNATIONAL TRUST COMPANY

Royal Bank Plaza, North Tower, Box 75
Toronto, Ontario, Canada
Contact: William A. Pascoe, vice president-pension services, (416) 865-0515

Number of separate master trust clients: 19
Number of directed trust clients: 31
Master trust assets: $2.8 billion
Directed trust assets: $1.9 billion
Custodial employee benefit assets: $553.5 million
Total employee benefit assets: $1.8 billion
Number of separate portfolios: 218
Average number of accounts per account supervisor: 8
Average number of portfolios per investment manager contact: N/A
Accounting system utilized: Trade date (full accrual), contractual settlement date
Fail float credit provided: No
Short-term instruments used: Short-term investment funds
Date short-term interest credited: Last day of month
Timeliness of reporting package: 8-10th business day after reporting period
Services provided: Performance measurement, portfolio analysis, participant recordkeeping, securities lending benefit disbursement, index fund, short term investment funds, pooled fund investments, global custody
Policy for crediting dividends and interest: On payable date through credit to client's account
Fee structure: Based on combination of asset value and individual services, based on complexity of services required

IRVING TRUST COMPANY

One Wall Street
New York, NY 10015
Contact: Gary L. Davenport, vice president, (212) 635-1700

Number of separate master trust clients: 31
Number of directed trust clients: 130
Master trust assets: $13.3 billion
Directed trust assets: $3.2 billion
Custodial employee benefit assets: $31 billion
Total employee benefit assets: $47.5 billion
Number of separate portfolios: 177
Average number of accounts per account supervisor: 10
Average number of portfolios per investment manager contact: 10
Accounting system utilized: Trade date (full accrual), contractual settlement date with pending adjustment
Fail float credit provided: Yes
Short-term instruments used: Irving Trust STIF, master notes, money market funds
Date short-term interest credited: 1st day of following month
Timeliness of reporting package: 5th-7th business day
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, market inventory fund, investment management, global custody, pension consulting services, immunized and dedicated bond portfolios, on-line portfolio statusing, cash management
Policy for crediting dividends and interest: On payable date in Fed funds
Fee structure: Based on combination of asset value and individual services

LASALLE NATIONAL BANK

135 S. LaSalle St.
Chicago, IL 60690
Contact: James F. Sullivan, senior vice president, (312) 443-2497

Number of separate master trust clients: 10
Number of directed trust clients: 50
Master trust assets: $300 million
Directed trust assets: $150 million
Custodial employee benefit assets: N/A
Total employee benefit assets: $1.2 billion (excluding pure custody)
Number of separate portfolios: 4 per master trust, 10 maximum
Average number of accounts per account supervisor: 40
Average number of portfolios per investment manager contact: 2
Accounting system utilized: Contractual settlement date with pending adjustment, actual delivery date (varies by account)
Fail float credit provided: Optional
Short-term investment used: STIF
Date short-term interest credited: Second or third workday
Timeliness of reporting package: Varies by client
Services provided: Performance measurement, portfolio analysis, participant recordkeeping, benefit disbursement, six equity and four fixed income investment funds, prototype 401(k) plan
Policy for crediting dividends and interest: Credited on payable date
Fee structure: Based on base fee plus asset value only; based on individual services performed for benefit checks (pension) and participant recordkeeping

MANUFACTURERS NATIONAL BANK OF DETROIT

100 Renaissance Center, 13th Floor
Detroit, MI 48080
Contact: Robert R. Schoonbeck, senior vice president and senior trust officer, (313) 222-4471

Number of separate master trust clients: 64
Number of directed trust clients: 527
Master trust assets: $13.6 billion
Directed trust assets: $15.5 billion
Custodial employee benefit assets: $11.4 billion
Total employee benefit assets: $25.7 billion
Number of separate portfolios: 75
Average number of accounts per account supervisor: 60
Average number of portfolios per investment manager contact: 70
Accounting system utilized: Contractual settlement date—pending trade date accrual schedule, accruing all transactions as of trade date and incorporating accrued transactions in the account value
Fail float credit provided: Yes
Short-term instruments used: Manufacturers Bank Short Term Investment Fund, mainly, although seven additional funds are offered
Date short-term interest credited: Fifth business day of each month
Timeliness of reporting package: Two weeks after the close of the period
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, market inventory fund
Policy for crediting dividends and interest: Automatically advanced on payable date
Fee structure: Based on combination of asset value and individual services

MANUFACTURERS HANOVER TRUST

530 Fifth Avenue, 4th Floor
New York, NY 10036
Contact: Renee San Marco, vice president, (212) 819-1580

Number of separate master trust clients: 71
Number of directed trust clients: 237
Master trust assets: $11.7 billion
Directed trust assets: $5.9 billion

Custodial employee benefit assets: $4.1 billion
Total employee benefit assets: $18.4 billion
Number of separate portfolios: N/A
Average number of accounts per account supervisor: N/A
Average number of portfolios per investment manager contact: N/A
Accounting system utilized: Trade date (full accrual), contractual settlement date with pending adjustment, contractual settlement date, actual delivery date
Fail float credit provided: Yes
Short-term instruments used: STIF, demand notes, T-bills or other requirements of manager
Date short-term interest credited: Accrues daily; credited monthly
Timeliness of reporting package: 5-7 days audited
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, asset allocation, asset liability planning
Policy for crediting dividends and interest: On payable date to account in good funds and available on that date for reinvestment
Fee structure: Based on combination of asset value and individual services

MARINE MIDLAND BANK, N.A.

250 Park Avenue
New York, NY 10177
Contact: Moira L. Patterson, assistant vice president, (212) 503-2724

Number of separate master trust clients: 19
Number of directed trust clients: 100
Master trust assets: $1.8 billion
Directed trust assets: $600 million
Custodial employee benefit assets: $800 million
Total employee benefit assets: $3.2 billion
Number of separate portfolios: 450
Average number of accounts per account supervisor: 15-20
Average number of portfolios per investment manager contact: N/A
Accounting system utilized: Trade date (full accrual), contractual settlement date
Fail float credit provided: Yes
Short-term instruments used: T-bills, master notes, commercial paper, STIF and other money market funds
Date short-term interest credited: End of month
Timeliness of reporting package: 7 business days
Services provided: Performance measurement, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, on-line access through FAIMIS system
Policy for crediting dividends and interest: On payable date; automatic
Fee structure: Based on combination of asset value and individual services

MARSHALL & ILSLEY TRUST COMPANY

770 North Water Street
Milwaukee, WI 53202
Contact: Morry L. Birnbaum, vice president, (414) 287-7187

Number of separate master trust clients: 37
Number of directed trust clients: 600
Master trust assets: $3.5 billion
Directed trust assets: $900 million
Custodial employee benefit assets: $200 million
Total employee benefit assets: $2.7 billion
Number of separate portfolios: 600
Average number of accounts per account supervisor: 100
Average number of portfolios per investment manager contact: 15
Accounting system utilized : Contractual settlement date with pending adjustment
Fail float credit provided: Negotiated
Short-term instruments used: STIF with ACM; T-bills
Date short-term interest credited: Daily
Timeliness of reporting package: 5-7 business days
Services provided: Performance measurement, participant recordkeeping, ERISA disclosure assistance, benefit disbursement, on-line access, investment management
Policy for crediting dividends and interest: On payable date in actual funds
Fee structure: Based on combination of asset value and individual services

MARYLAND NATIONAL BANK

2 N. Charles Street
P.O. Box 995
Baltimore, MD 21203
Contact: Gordon R. Boardway, senior trust officer and manager, employee benefits sales, (301) 244-1443

Number of separate master trust clients: 3
Number of directed trust clients: 80
Master trust assets: $76 million
Directed trust assets: $673 million
Custodial employee benefit assets: $26 million
Total employee benefit assets: $775 million
Number of separate portfolios: N/A
Average number of accounts per account supervisor: N/A
Average number of portfolios per investment manager contact: N/A
Accounting system utilized: Contractual settlement date
Fail float credit provided: Yes
Short-term instruments used: Cash reserve fund, CDs, commercial paper, Treasuries, etc.
Date short-term interest credited: Daily
Timeliness of reporting package: Within 10 days for most reporting
Services provided: Performance measurement, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, four collective investment funds, GIC Search, cash management
Policy for crediting dividends and interest: On due date or delivery date; credited to cash
Fee structure:Based on conbination of asset value and individual services

MELLON BANK

One Mellon Bank Center
Pittsburgh, PA 15258
Contact: Gary A. Rothman, vice president, (412) 234-1336

Number of separate master trust clients: 88
Number of directed trust clients: 57
Master trust assets: $86.6 billion
Directed trust assets: $2.5 billion
Custodial employee benefit assets: $5.4 billion (also included in master trust asset value)
Total employee benefit assets: $86.1 billion
Number of separate portfolios: 1,000
Average number of accounts per account supervisor: 8
Average number of portfolios per investment manager contact: 50
Accounting system utilized: Trade date (full accrual)
Fail float credit provided: Yes
Short-term instruments used: Commingled, short-term funds utilizing A-1 and P-1 investments
Date short-term interest credited: Earned daily/credited weekly
Timeliness of reporting package: Monthly, quarterly and annually with monthly statements available third business day following month end
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, market inventory fund, global custody, performance analytics, on-line access, options & futures, customized reports
Policy for crediting dividends and interest: On payable date; clearinghouse funds for corporate bonds and equity; Fed funds for governments
Fee structure: Based on conbination of asset value and individual services

MONTREAL TRUST COMPANY OF CANADA

15 King Street West
Toronto, Ontario
Contact: Kenneth E. Neely, assistant vice president, corporate services, (416) 860-5848

Number of separate master trust clients: 77
Number of directed trust clients: 279
Master trust assets: $5.2 billion
Directed trust assets: $1.2 billion
Custodial employee benefit assets: $13.6 billion
Total employee benefit assets: $14.8 billion
Number of separate portfolios: 1805
Average number of accounts per account supervisor: 40
Average number of portfolios per investment manager contact: N/A
Accounting system utilized: Contractual settlement date
Fail float credit provided: No
Short-term instruments used: T-Plus (STIF)
Date short-term interest credited: Monthly (accrued daily)
Timeliness of reporting package: 5 to 10 working days following month end
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, benefit disbursement, index fund, global custody, specialized index funds
Policy for crediting dividends and interest: On payable date; credited automatically to account
Fee structure: Based on conbination of asset value and individual services

NATIONAL BANK OF DETROIT

611 Woodward Avenue
Detroit, MI 48226
Contact: Larry D. Rankens, trust officer, (313) 225-2660

Number of separate master trust clients: 61
Number of directed trust clients: 38
Master trust assets: $19.9 billion
Directed trust assets: $1.7 billion
Custodial employee benefit assets: $10.9 billion
Total employee benefit assets: $21.6 billion
Number of separate portfolios: 320
Average number of accounts per account supervisor: 15-20
Average number of portfolios per investment manager contact: 3
Accounting system utilized: Trade date (full accrual), contractual settlement date with pending adjustment
Fail float credit provided: Yes. Purchase fail float

is fully invested in NBD's STIF until actual settlement date
Short-term instruments used: NBD's master trust STIF
Date short-term interest credited: Second business day after end of month
Timeliness of reporting package: Monthly cash statements and inventories, 5 to 7 business days; daily account ledgers, the day after the reporting period; annual/interim reports and plan valuations, 20 business days
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, market inventory fund, data monitor (on-line access), cash management, global custody, custodian services
Policy for crediting dividends and interest: On payable date in federal funds unless unusual payment patterns such as foreign securities, GNMA, etc.
Fee structure: Based on combination of asset value and individual services

NATIONAL TRUST COMPANY
21 King Street East
Toronto, Ontario M5C 1B3
Contact: Julie K. Spergel, marketing consultant, (416) 361-3611

Number of separate master trust clients: 35
Number of directed trust clients: 135
Master trust assets: $3.2 billion
Directed trust assets: $3.5 billion
Custodial employee benefit assets: $7.0 billion
Total employee benefit assets: $11.2 billion
Number of separate portfolios: 85
Average number of accounts per account supervisor: 10
Average number of portfolios per investment manager contact: N/A
Accounting system utilized: Contractual settlement date with pending adjustment
Fail float credit provided: N/A—95% of trades processed through Canadian Depository for Securities (book-based system)
Short-term instruments used: STIF
Date short-term interest credited: Daily
Timeliness of reporting package: 10 business days
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, benefit disbursement, index fund, global fund
Policy for crediting dividends and interest: On due date automatically by bond and dividend registers
Fee structure: Based on combination of asset value and individual services

THE NORTHERN TRUST COMPANY
50 South LaSalle Street
Chicago, IL 60675
Contact: Thomas W. Kimen, Jr., senior vice president, (312) 630-6000

Number of separate master trust clients: 177
Number of directed trust clients: 38
Master trust assets: $89.1 billion
Directed trust assets: $2.2 billion
Custodial employee benefit assets: $4.1 billion
Total employee benefit assets: $95.4 billion
Number of separate portfolios: 2,400
Average number of accounts per account supervisor: 7
Average number of portfolios per investment manager contact: 24
Accounting system utilized: Contractual settlement date with pending adjustment
Fail float credit provided: Yes
Short-term instruments used: STIF for both 401(a) qualified and non-qualified plans
Date short-term interest credited: Third business day after month end
Timeliness of reporting package: 3 to 5 business days after period end; available on-line 24 hours a day
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, market inventory fund, global custody, multi-currency accounting, asset allocation control, dedicated & immunized bond funds, portfolio restructuring, portfolio insurance, EAFE index fund, electronic delivery, options and futures, real estate, consulting, cash management, collective fund investment management
Policy for crediting dividends and interest: On payable date. Regularly scheduled dividend and interest payments are credited on payable date in good funds regardless of whether The Northern Trust has received the funds
Fee structure: Based on combination of asset value and individual services

REPUBLICBANK DALLAS
P.O. Box 241
Dallas, TX 75221
Contact: David J. Pittman, senior vice president, (214) 922-6506

Number of separate master trust clients: 240
Number of directed trust clients: Included with master trust clients
Master trust assets: $19.1 billion
Directed trust assets: Included with master trust assets
Custodial employee benefit assets: $10.7 billion
Total employee benefit assets: $26.5 billion
Number of separate portfolios: 193
Average number of accounts per account supervisor: 10
Average number of portfolios per investment manager contact: 7
Accounting system utilized: Trade date (full accrual), contractual settlement date
Fail float credit provided: Yes
Short-term instruments used: Commingled STIF, individually managed STIF, aggressive STIF and others
Date short-term interest credited: First and 15th
Timeliness of reporting package: On-line, second business day; hard copy, fifth business day
Services provided: On-line performance measurement, portfolio analysis, portfolio review, on-line participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index funds, market inventory fund, global custody, portfolio insurance, daily pricing, futures & options trading, individually managed insured CDs, GIC wholesale/managed, control disbursement, 401(k) and on-line access
Policy for crediting dividends and interest: On payable date in good funds
Fee structure: Based on combination of asset value and individual services

RICHFIELD BANK & TRUST CO.
6625 Lyndale Ave. So.
Richfield, MN 55423
Contact: Jill M. Edelstein, assistant vice president, trust employee benefits, (612) 861-8321

Number of separate master trust clients: 0
Number of directed trust clients: 800
Master trust assets: 0
Directed trust assets: $150 million
Custodial employee benefit assets: $36 million
Total employee benefit assets: $180 million
Number of separate portfolios: 900
Average number of accounts per account supervisor: 200
Average number of portfolios per investment manager contact: 450
Accounting system utilized: Contractual settlement date
Fail float credit provided: N/A
Short-term instruments used: Money market funds
Date short-term interest credited: First day of month
Timeliness of reporting package: Within 30 days of year end
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, ERISA disclosure assistance, benefit disbursement
Policy for crediting dividends and interest: On date received

ROYAL TRUST
P.O. Box 7500, Station A
Toronto, Ontario M5W 1P9
Contact: Lyn Statten, director, client service, (416)867-2420

Number of separate master trust clients: 68
Number of directed trust clients: 305
Master trust assets: $13.2 billion
Directed trust assets: $13.5 billion
Custodial employee benefit assets: $14.3 billion
Total employee benefit assets: $18.1 billion
Number of separate portfolios: 1,044
Average number of accounts per account representative: 34
Average number of portfolios per investment manager contact: N/A
Accounting system utilized: Contractual settlement date with pending adjustment
Fail float credit provided: No
Short-term instruments used: All
Date short-term interest credited: On valuation date, monthly
Timeliness of reporting package: 10 business days
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, benefit disbursement, global custody network on-line access, uploading & downloading of data
Policy for crediting dividends and interest: Credited to account on due date
Fee structure: Based on combination of asset value and individual services

SAN DIEGO TRUST & SAVINGS BANK
530 Broadway
San Diego, CA 92101-5209
Contact: David R. Holst, vice president, (619) 238-2166

Number of separate master trust clients: N/A
Number of directed trust clients: 1,312
Master trust assets: N/A
Directed trust assets: $657 million
Custodial employee benefit assets: $13 million
Total employee benefit assets: $670 million
Number of separate portfolios: 1,791
Average number of accounts per account supervisor: 220
Average number of portfolios per investment manager contact: 300
Accounting system utilized: Trade date (full accrual), contractual settlement date

Fail float credit provided: No
Short-term instruments used: Five money market sweep accounts
Date short-term interest credited: Month end
Timeliness of reporting package: Sixty days following receipt of participant data
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, ERISA disclosure assistance, benefit disbursement
Policy for crediting dividends and interest: Paid on payable date
Fee structure: Based on combination of asset value and individual services

STATE STREET BANK AND TRUST COMPANY
P.O. Box 1713
Boston, MA 02105
Contact: J.D. Nelson, senior vice president, (617) 786-6492

Number of separate master trust clients: 194
Number of directed trust clients: Included with master trust clients
Master trust assets: $44.8 billion
Directed trust assets: Included with master trust assets
Custodial employee benefit assets: $65.4 billion
Total employee benefit assets: $110.3 billion
Number of separate portfolios: 1,693
Average number of accounts per account supervisor: 5
Average number of portfolios per investment manager contact: 4
Accounting system utilized: Trade date (full accrual)
Fail float credit provided: Yes
Short-term instruments used: STIF, Government STIF, Maturity Plus STIF, Stock Performance Index Futures Fund (SPIFF, SPIFF Plus and others), Synthetic STIF, Institutional Liquid Assets, The Merrill Lynch Fund and the Common Fund
Date short-term interest credited: Second business day after month end
Timeliness of reporting package: 5-7 business days after month end
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, market inventory fund, global custody network with multicurrency accounting, plan accounting, pool accounting, 401(k) services, on-line client access, performance measurement and analytics, client report formatting capabilities, daily pricing
Policy for crediting dividends and interest: As received
Fee structure: Based on asset value, transaction volume and individual services performed

TEXAS COMMERCE BANK
P.O. Box 2558
Houston, TX 77252-8035
Contact: Willard B. Wagner III, vice president and trust officer, (713) 236-4497

Number of separate master trust clients: 16
Number of directed trust clients: 17
Master trust assets: $1.4 billion
Directed trust assets: $393 million
Custodial employee benefit assets: $1.4 billion
Total employee benefit assets: $5.1 billion
Number of separate portfolios: 100
Average number of accounts per account supervisor: 25
Average number of portfolios per investment manager contact: 3
Accounting system utilized: Actual delivery date
Fail float credit provided: No
Short-term instruments used: Master notes, repos, commercial paper in commingled funds
Date short-term interest credited: Month end
Timeliness of reporting package: 7 business days after month end
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, benefit disbursement
Policy for crediting dividends and interest: Credited to account on payable date + 1
Fee structure: Based on combination of asset value and individual services

TRUST COMPANY BANK
25 Park Place
Atlanta, GA 30303
Contact: James E. Arnett, group vice president, (404) 588-7329

Number of separate master trust clients: 20
Number of directed trust clients: 35
Master trust assets: $1.1 billion
Directed trust assets: $800 million
Custodial employee benefit assets: $550 million
Total employee benefit assets: $2.4 billion
Number of separate portfolios: 300
Average number of accounts per account supervisor: 38
Average number of portfolios per investment manager contact: 15-18
Accounting system utilized: Trade date (full accrual), contractual settlement date
Fail float credit provided: No
Short-term instruments used: Yes
Date short-term interest credited: First business day of each month
Timeliness of reporting package: Chronological statements generally mailed within 3 business days; categorized statements, within 15 business days
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, securities lending, ERISA disclosure assistance, benefit disbursement
Policy for crediting dividends and interest: Advanced to accounts on payable date
Fee structure: Based on combination of asset value and individual services

UNITED MISSOURI BANK OF KANSAS CITY, N.A.
10th and Grand
P.O. Box 226
Kansas City, MO 64141
Contact: Robert E. Reiter, executive vice president, (816) 556-7474

Number of separate master trust clients: 33
Number of directed trust clients: 342
Master trust assets: $875 million
Directed trust assets: $955 million
Custodial employee benefit assets: $720 million
Total employee benefit assets: $1.4 billion
Number of separate portfolios: 83
Average number of accounts per account supervisor: 25
Average number of portfolios per investment manager contact: 5
Accounting system utilized: Contractual settlement date with pending adjustment
Fail float credit provided: No
Short-term instruments used: Short-Term Money Market Fund and UMB Money Market Fund are primary. Other secondary instruments also used
Date short-term interest credited: 8-14 days after mentioned
Timeliness of reporting package: 2-21 days, dependent on assets held
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, ERISA disclosure assistance, benefit disbursement, prototype and pattern plans
Policy for crediting dividends and interest: On payable date in cash or in kind
Fee structure: Based on combination of asset value and individual services

U.S. NATIONAL BANK OF OREGON
P.O. Box 3168
Portland, OR 97208
Contact: Marianne Nelson, business development officer, (503) 225-6900

Number of separate master trust clients: 13
Number of directed trust clients: 51
Master trust assets: $20.9 million
Directed trust assets: $231.4 million
Custodial employee benefit assets: $117.6 million
Total employee benefit assets: $728.9 million
Number of separate portfolios: 53
Average number of accounts per account supervisor: 63
Average number of portfolios per investment manager contact: 3
Accounting system utilized: Contractual settlement date
Fail float credit provided: Yes
Short-term instruments used: Qualivest Money Market Fund, Federated Money Market Fund, Ford Motor Master Notes, G.E. Master Notes, G.M. Master Notes, Merrill Lynch Repo, Merrill Lynch Master Notes, Institutional liquid assets
Date short-term interest credited: Pay date
Timeliness of reporting package: Within 10 business days of month end
Services provided: Performance measurement, portfolio analysis, portfolio review, participant recordkeeping, ERISA disclosure assistance, benefit disbursement, trustee services, investment management, employee meetings, prototype defined contribution plans, flex plan consulting
Policy for crediting dividends and interest: On pay date by automatic book entry through Depository Trust Company direct to account
Fee structure: Based on combination of asset value and individual services

UNITED STATES TRUST COMPANY OF NEW YORK
45 Wall Street
New York, NY 10005
Contact: Robert Pagano, vice president, (212) 806-4500

Number of separate master trust clients: 36
Number of directed trust clients: 75
Master trust assets: $9 billion
Directed trust assets: $5.5 billion
Custodial employee benefit assets: $3 billion
Total employee benefit assets: $17.5 billion
Number of separate portfolios: 557
Average number of accounts per account supervisor: 93
Average number of portfolios per investment manager contact: 70
Accounting system utilized: Trade date (full accrual), actual delivery date
Fail float credit provided: Yes

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Short-term instruments used: Pooled funds and demand notes
Date short-term interest credited: Third business day of month
Timeliness of reporting package: 5-15 days after month end
Services provided: Performance measurement, portfolio analysis, securities lending, ERISA disclosure assistance, benefit disbursement, index fund
Policy for crediting dividends and interest: On payable date in Fed funds
Fee structure: Based on combination of asset value and individual services

WELLS FARGO BANK
475 Sansome St., 6th Floor
San Francisco, CA
Contact: Bruce Simon, vice president, (415) 396-3867

Number of separate master trust clients: 3
Number of directed trust clients: 723
Master trust assets: $1.5 billion
Directed trust assets: $5.7 billion
Custodial employee benefit assets: $300 million
Total employee benefit assets: $7.5 billion
Number of separate portfolios: 20
Average number of accounts per account supervisor: 100
Average number of portfolios per investment manager contact: 90
Accounting system utilized: Trade date (full accrual) to be installed second quarter 1987, contractual settlement date with pending adjustment, contractual settlement date, five days following trade date
Fail float credit provided: No
Short-term instruments used: U.S. Government securities, U.S. government agency securities, bank obligations, short-term corporate debt instruments and repurchase agreements
Date short-term interest credited: Last day of the month
Timeliness of reporting package: 10th-15th business day (up to 45 days for annual reports)
Services provided: Performance measurement, portfolio analysis, portfolio review, securities lending, ERISA disclosure assistance, benefit disbursement, index fund, market inventory fund
Policy for crediting dividends and interest: On payable date in advance funds
Fee structure: Based on combination of asset value and individual services

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Pension World

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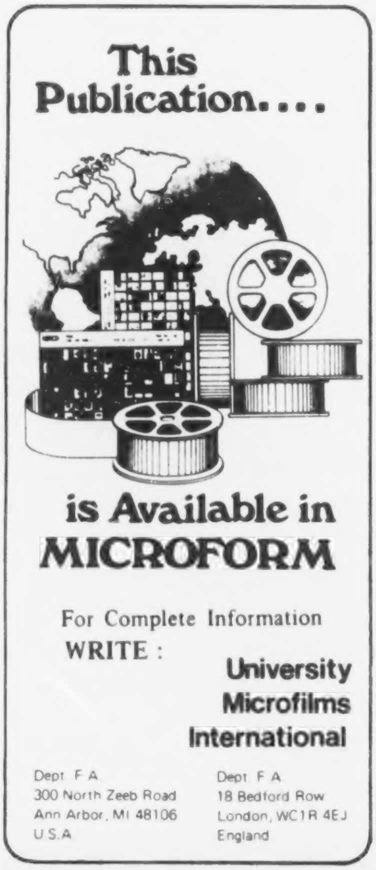
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MARCH 1987

Pension World

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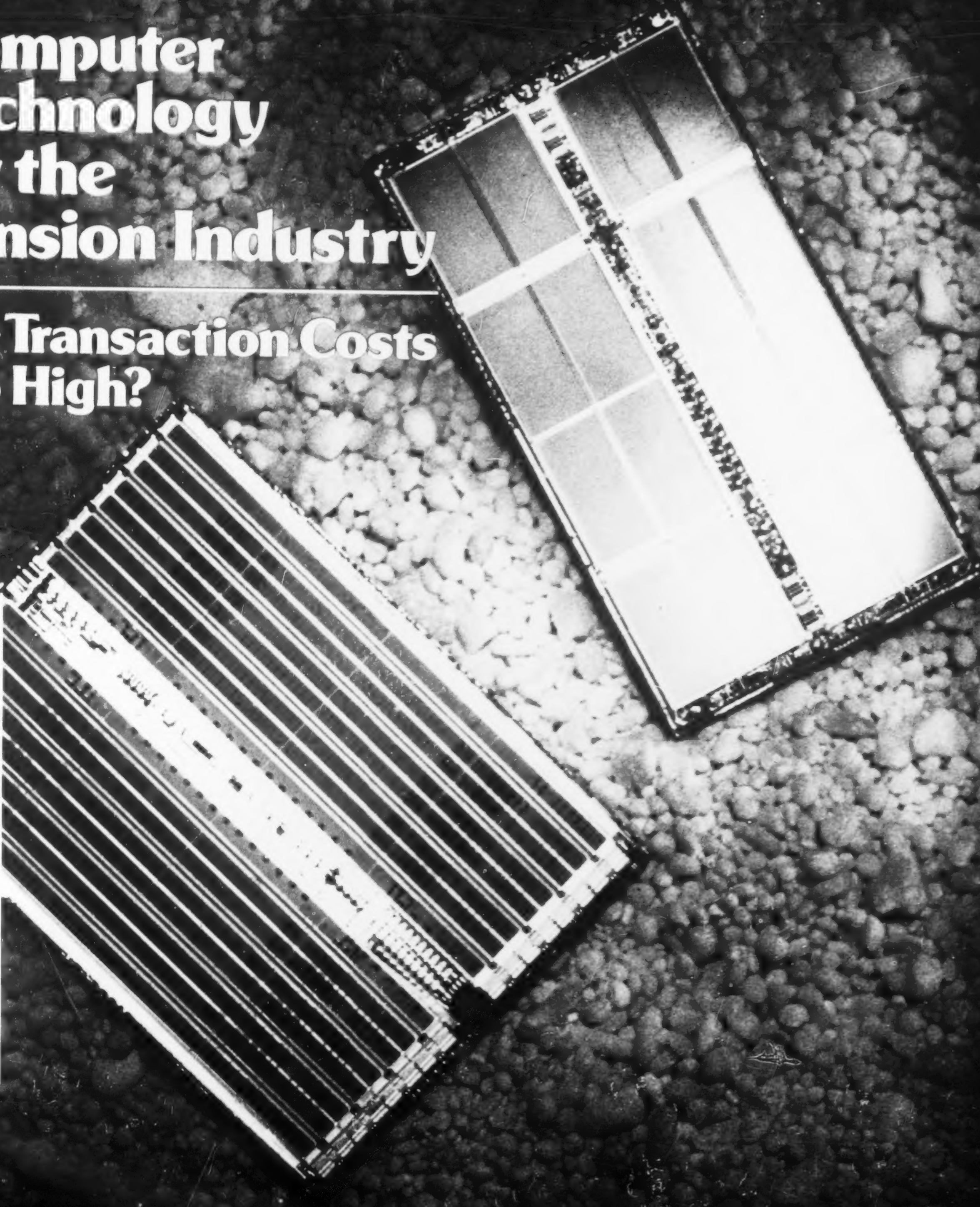
Computer Technology for the Pension Industry

Are Transaction Costs Too High?



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Cover: **Megabyte chips such as these provide the horsepower behind today's computer systems. Photo courtesy of IBM.**

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BPA
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Money managers predict the future!

What do money managers think investments will return over the next five years?

by **ELVA B. FERRARI**
Vice President
Butcher Consulting Group
Pittsburgh, Pa.

Consulting organizations periodically survey the so-called "smart money" for investment insights. Because of current market concerns, the Butcher Consulting Group decided to poll portfolio managers regarding their respective market return forecasts. Our view was that five-year projections will have a higher degree of usefulness than either one-year or very long-term projections. Importantly, the projections can provide planning benchmarks for fund sponsors making the asset mix decision.

We surveyed over 35 money managers. The 20 managers who provided usable risk and return projections included major banks and insurance companies, and mid-size to large investment advisors. Assets under management range from $500 million to over $40 billion. We requested five-year annualized market return projections for six asset classes:

- large capitalization stocks (S&P 500);
- small capitalization stocks (NASDAQ);
- international equity (EAFE—Europe, Australia, Far East Index);

Table 1 **Summary of Asset Class Projections 1987-1991 Performance and Risk**

	Range (%)		Median (%)		
	ROR	SD	ROR	SD	No. Responses
S&P 500	8.0-15.3	13.0-23.0	11.0	16.7	18
NASDAQ	9.0-17.0	14.0-25.0	12.0	19.1	12
Int'l. Eq.	6.0-17.5	15.0-20.7	11.8	16.9	13
Real Estate	4.0-12.0	9.0-18.0	8.0	13.5	10
Bonds	6.0-13.5	6.0-15.0	8.4	10.0	19
T-Bills	3.5- 7.0	0.9- 5.0	6.0	2.7	19
C.P.I.	3.0- 6.0	N/A	4.0	N/A	19

ROR = Annualized total return per year
SD = Annual standard deviation of total return per year

Table 2 **Asset Class Performance: Past vs. Projected (Annualized Total Returns)**

	1987-1991[1]	1981-1985	1976-1980	1961-1985[3]
S&P 500	11.0%	14.6%	13.9%	9.5%
NASDAQ	12.0	9.9	11.0[2]	N/A
Int'l. Eq.	11.8	15.8	17.0[2]	N/A
Real Estate	8.0	12.7	N/A	N/A
Bonds	8.4	16.2	2.5	5.9[2]
T-Bills	6.0	10.2	7.7	6.5
C.P.I.	4.0	4.8	9.2	5.3

[1] Median projection
[2] Estimated
[3] Source: CDA Investment Technologies, Inc.

- diversified equity real estate;
- bonds (Shearson Lehman Government Corporate Bond Index); and
- Treasury bills.

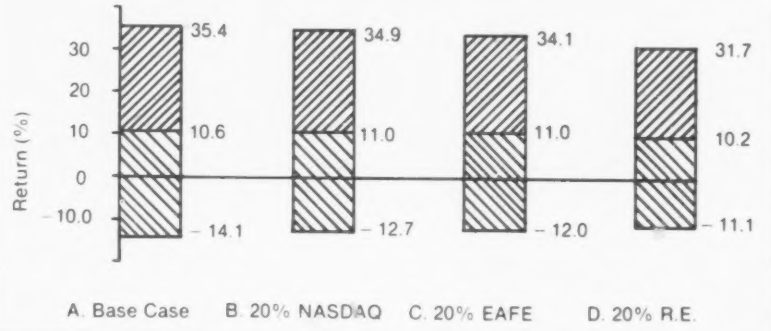
Respondents also were asked to supply projected risk levels in the form of yearly standard deviations and an inflation forecast as measured by the Consumer Price Index (CPI).

Survey results

Table 1 summarizes the responses. The high-low response ranges were quite wide. Yet the median (and arithmetic mean) responses were typically close together, suggesting a normal distribution. From a performance-only perspective, NASDAQ equities should be the favored class of equity. The median projected return is 12.0 percent. International equities are a close second (11.8 percent), followed by the S&P 500 (11.0 percent). Equity real estate and bond expectations fall to single digit levels. The CPI projection is for a moderate four percent inflation. T-Bills are projected to offer a two percent real return. Standard deviations of the three common stock classes are all absolutely high—17 to 19 percent. Recognizing the small number of real estate responses, the standard deviation of this asset class is remarkably high, i.e., 13.5 percent; respondees assumed that real estate return variability would be a function of market conditions, rather than merely appraised values. Finally, T-Bill return deviation is a low 2.7 percent.

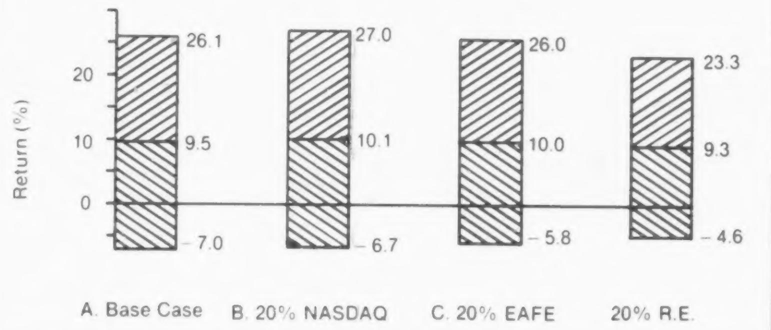
In the context of the recent and long-term past, this group of respondees is moderately optimistic about equities, bonds, inflation and real return. They are relatively pessimistic about real estate. Table 2 displays the current projections, together with performance for three historical periods. Bull market performance for five years ending 1985 clearly exceeded most of the current projections. S&P, EAFE, T-Bills, and the CPI also exceeded the current projections during the 1976-1980 high inflation period. Projections for both stocks and bonds exceed the 25-year historical returns by approximately two percent. CPI projections are one percent lower, while T-Bill returns are similar to the 1961-1985 period.

Table 3 **Diversification in an Equity Portfolio**
Range of Possible Returns at 90% Probability



These are the high, median and low returns expected for an equity portfolio whose "base case" (A) consists of 90% S&P 500 stocks and 10% Treasury bills. In this hypothetical example, the portfolio is diversified by the addition of 20% small capitalization stocks (Case B), 20% international stocks (Case C) and 20% real estate (Case D).

Table 4 **Diversification in a Balanced Portfolio**
Range of Possible Returns at 90% Probability



These are the high, median and low returns expected for a balanced portfolio whose "base case" (A) consists of 50% S&P 500 stocks, 40% government and corporate bonds and 10% Treasury bills. In this hypothetical example, the portfolio is diversified by the addition of 20% small capitalization stocks (Case B), 20% international stocks (Case C) and 20% real estate (Case D).

Given these projections, what would happen to a sponsor's portfolio if these returns became a reality? We decided to find out. We applied our proprietary computer simulation program, "MIX & MATCH," to a variety of "what if" scenarios. The median risk and return responses (presented in Table 1) for all six asset classes became key model inputs. Correlation coefficients (r^2) between pairs of asset classes were also required for the model. In our judgment, r^2 does not radically change over time. Therefore, we employed the latest 12-year correlations.

Starting separately with an equity portfolio (90 percent S&P, 10 percent T-Bills) and a balanced portfolio (50 percent S&P, 40 percent bonds, 10 percent T-Bills), we introduced additional asset classes in small increments. To be realistic, NASDAQ, EAFE, and/or equity real estate components were capped at 20 percent.

Table 3 displays the potential risk and return impact of diversifying an equity portfolio. Starting with 90 percent S&P, 10 percent T-Bills (Case A), we modeled a 20 percent diversification into small capitalization equities (Case B), international equities (Case C) and real estate (Case D). At first glance, the results are not startling. Return is marginally improved by diversifying into

Continued on page 42

short futures position, helping to offset losses in the equity portfolio. To refine the hedging process, the number of contracts sold could be adjusted by the portfolio's beta relative to that particular index. If the portfolio's beta were 1.2 relative to the S&P 500, for example, then the number of contracts sold would increase to 384 (1.2 x 320).

Hedging by selling stock index futures is particularly valuable when the underlying securities are still fundamentally attractive or insufficiently liquid. The manager is able to maintain his holdings while protecting the portfolio from market risk and avoiding the negative self-impact of selling one's own stocks. Using index futures to reduce equity exposure, of course, does not eliminate the necessity of selling a holding whose fundamentals have become negative or unattractive.

Other uses

The use of stock index futures for asset allocation decisions can be especially useful when market conditions change abruptly and rapid execution is of prime importance. In addition, plan sponsors who have a number of investment managers may avoid disrupting those managers by maintaining a separate account consisting primarily of cash, stock index futures or bond futures. This balancing account may be used to alter asset mix levels without involving or impacting their investment managers.

Because a theoretical fair value can be determined for a futures contract, an analysis must be made at the time of execution to avoid selling undervalued contracts or purchasing overvalued contracts.

Contract specifications and terms of settlement are different from those for trading stocks. At the time the position is established, a small good-faith deposit, usually in the form of Treasury bills, is required. Positions are subsequently marked to market daily, which can result in cash flows into or out of the account.

Use of stock index futures to implement asset allocation decisions, therefore, increases investment flexibility due to excellent liquidity and reduces transaction costs compared to trading an equivalent dollar amount of equities. Over time, the cumulative transaction cost savings may be significant. Therefore performance results may be increased dramatically as well. □

Photo © 1986 by Alen MacWeeney

Richard L. Reach is a portfolio manager and research analyst with Forstmann-Leff Associates Inc., New York. Prior to joining the firm, he worked at J.P. Morgan Investment Management Inc., where he helped develop their stock index futures and options program. He holds a B.A. from Brown University and an M.B.A. from the Graduate School of Business Administration at Columbia University.

Money managers

Continued from page 39

NASDAQ or international stocks. In both instances, the standard deviation or range of returns is also modestly reduced. Return decreases marginally by adding equity real estate. However, a 20 percent real estate component does reduce risk compared to the other scenarios.

Similar results for a balanced portfolio appear in Table 4. Base Case A is represented by 50 percent S&P, 40 percent bonds and 10 percent T-Bills. By diversifying into NASDAQ or EAFE, projected return increases from 9.5 percent to approximately 10 percent. Real estate diversification reduces both return and risk.

The projected risk and returns for the three equity classes (large capitalization, small capitalization and international) are comparable. The projected risk level for equity real estate is significantly higher than its historical level. The major implication, therefore, is that there appears little to be gained from diversifying into less traditional investment vehicles.

> *". . . the most important asset mix decision is the equity allocation . . . Particularly for sponsors of smaller-sized funds, there appears to be no immediate need to diversify into less traditional investments."*

Based on our survey projections and the model output, the most important asset mix decision is the equity allocation. Large and small capitalization domestic equities, as well as foreign equities, are all projected to earn double-digit returns (with similar risk). Therefore, a decision among these equity options is less significant. Particularly for sponsors of smaller-sized funds, there appears to be no immediate need to diversify into less traditional investments. In fact, smaller-sized funds could suffer a negative impact from increased fees, reporting costs, additional monitoring and surveillance needs, etc. □

Elva B. Ferrari is a vice president of Butcher & Singer, Pittsburgh. She joined the Butcher Consulting Group seven years ago. Her responsibilities include consulting on pension and investment matters to plan sponsors in the private and public sectors as well as endowments and foundations. She holds a B.S. from the University of Pittsburgh.

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–Investments
–Health Care

Investment Survey of Statewide Retirement Systems

Pension World

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Mortgage-backed securities win support from public pension funds

State retirement systems are likely to hold a higher percentage of assets in mortgage securities than corporate pension funds.

State retirement systems play a major role in the financial markets. They control over $400 billion of the almost $2 trillion of private and public pension assets in the U.S. today. Overall, state plans hold about 15 percent of their assets in mortgage securities, as compared to only five percent for private pension plans.

State plans sometimes come under political pressure to buy larger amounts of mortgage securities. State plans are also pressured to invest in mortgages and other securities that are originated in their state. These pressures often are reflected in the plan's investment policy statements.

This article reports on an analysis of state pension plan investment policy statements and their mortgage holdings. The study covered the policy statements of 60 plans from 32 states. The conclusion of the analysis is that most state plans have policy statements that encourage mortgages either directly or indirectly and these state plans invest much higher percentages of their assets in mortgages than do plans whose policy statements do not include some kind of an endorsement of mortgage securities.

State statutes and regulations govern the investment of state pension assets. In general, state laws allow considerable flexibility but they are not as permissive as ERISA is for private plans. It is not unusual for state laws to limit investment in some types of securities and to require investment in certain other types. Statutes and regulations are frequently supplemented with investment policy statements.

State retirement system investments tend to be more conservative than the investments of private pension funds. This is illustrated by a comparison of equity holdings between public and private plans. In 1985, state plans held about one-third of their assets in common stock. This is up from about 20 percent only a few years ago. On the other hand, private pension funds typically put 50 to 60 percent of their assets in equity.

State pension plans may hold a higher percent of their assets in mortgages than do private plans simply because the state plans take larger positions in fixed income securities. A larger commitment to debt instruments provides room in their portfolios for more mortgage-backed securities. If the state funds were to increase their equity portfolios, they might do so at the expense of their mortgage holdings. A breakdown of public pension fund investments is provided in Table 1.

by **CLARENCE C. ELEBASH**
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Mortgage-backed securities

State pension plans own some individual mortgages but the principal vehicles for their mortgage investments are mortgage-backed securities that are traded in the secondary market. The prime instruments in the secondary mortgage market are the popular "pass-through" securities sponsored by federal agencies.

In addition to these usual "pass-throughs," public agencies and investment bankers regularly offer new mortgage products in an effort to attract pension investors. A recent successful innovation is the collateralized mortgage obligation or CMO, which reduces some maturity uncertainties associated with mortgage-backed securities.

The secondary market for mortgage-backed securities is active and growing. They are traded on a continuous basis and the market is large. As of December 1986, the estimated outstanding amounts were:[1]

Table 1 Public Pension Fund Investments 1985

Asset Class	Amount	Percent
Cash and equivalents	$34 billion	8%
Common stocks	139	33
Bonds	160	38
Mortgage securities	52	12
Equity real estate	11	3
Other investments	24	6
Total	$420 billion	100%

Note: These data include local government pension funds as well as state pension funds.

Source: *Public Pension Funds 1986: Report to Participants.* Greenwich Associates, Greenwich, Conn. 1986, p. 10.

Table 2 Comparison of Returns on Treasury and Corporate Bonds and Ginnie Maes

	Yields				
Year	U.S. Treasury Bonds (Composite)[1]	Spread	Corporate Bonds[2] (Aaa)	Spread	Ginnie Maes[3]
1977	7.06	0.96	8.02	0.02	8.04
78	7.89	0.84	8.73	0.25	8.98
79	8.74	0.89	9.63	0.59	10.22
80	10.81	1.13	11.94	0.61	12.55
81	12.87	1.30	14.17	1.12	15.29
82	12.23	1.56	13.79	0.89	14.68
83	10.84	1.20	12.04	0.21	12.25
84	11.99	0.72	12.71	0.42	13.13
85	10.75	0.62	11.37	0.24	11.61
86	8.14	0.88	9.02	0.28	9.30
Average =	10.13	1.01	11.14	0.46	11.61
Std Dev =	1.93		2.06		2.31

[1] All outstanding bonds neither due nor callable in less than 10 years.
[2] Selected long-term bonds.
[3] Assumed prepayment in 12 years on pools of 30-year mortgages.

Source: Board of Governors of the Federal Reserve System, *Federal Reserve Bulletin.*

Table 3 Policy Statement Categories

Category	Number of statements[1]	Total assets ($ billions)	Amount of mortgages ($ billions)	Percent of total assets in mortgages
A. Mortgages authorized in policy statement	27	$158.9	$23.6	14.8%
B. Maximum, minimum or range of percentages in mortgages or real estate specified or allowed	13	$ 89.3	$15.1	17.0%
C. In-state investments supported	19	$122.4	$20.2	16.5%
D. Mortgages, percentages or in-state investments *not* mentioned	10	$ 27.9	$ 2.4	8.0%
All plans with policy statements	42	$202.8	$29.3	14.5%

[1] Do not add to total because many plans were in more than one category.

Ginnie Maes	$258 billion
Freddie Macs	165
Fannie Maes	85
CMOs	11
	$519 billion

Mortgage-backed securities consistently promise higher returns than U.S. Treasury bonds and high grade corporate bonds. Table 2 compares the promised yields for the past ten years.

There are some difficulties from the investor's point of view, however. Although they provide attractive returns and are virtually free of default risk, mortgage-backed securities have indefinite maturities and no call protection and can cause accounting problems.

Pluses and minuses

Mortgage-backed securities are attractive investments for state retirement plans for several reasons:

1. High return and no default risk. In addition to having higher yields than comparable securities, government guarantees make mortgage-backed securities essentially free of default risk.

2. Diversification. The addition of another class of security to a portfolio increases diversification. Mortgage-backed security returns are less than perfectly correlated with stock and bond returns and thereby reduce portfolio volatility when they are added to a portfolio.

3. Promotion of desirable social goals. Funds for home loans are freed when pension funds and other investors buy mortgage-backed securities. The liquid assets of primary lenders (e.g., savings and loans) are replenished when their mortgages are resold to mortgage pools. Home building is an attractive political objective, and it is not unusual for elected officials and lobbying groups to put pressure on state plan trustees to increase mortgage investments. Whereas ERISA shields private pension plans from politically motivated investing, state plan assets are an appealing target for special interest groups favoring "good causes."

Nevertheless, increased state pension investments in mortgage-backed securities may be inhibited by several considerations:

1. Unattractive risk-adjusted returns. Although the nominal returns on mortgage-backed securities are high and they are free of default risk, the nominal return may not be so appealing when adjusted for other investment risks and certain complexities.

2. Complexities of mortgage-backed securities. Indefinite maturities and lack of call protection discourage pension funds from investing in mortgage pools. Homeowners almost always have the privilege of calling in their loans early with the payment of modest prepayment fees. Although the average maturity of mortgage-backed securities can be estimated from experience, periods of sharply lower interest rates create significant reinvestment risk for mortgage holders. When interest rates drop, investors get repaid at precisely the time when they do not want their money back—at a time when they have to reinvest at reduced returns. This is critical for plans that aim to match asset maturities with liability maturities at "locked in" rates of return.

These factors affect the attitudes of state trustees and investment managers. The trustees and managers are influenced by political as well as investment objectives.

Most state pension plans have some form of investment policy statement. The statement may stand alone, it may be incorporated into another document or even be specified in state law. Policy statements themselves usually include a description of the plan, risk and return objectives, type of management, authorized investments, prohibited investments, maybe some required investments and the plan for allocating assets among classes of securities and investment managers. Sometimes a policy statement will apply to several retirement plans in the same state.

Policy statements may influence the extent of mortgage investments by:

1. explicitly authorizing them as an investment. Some statements include mortgages as a separate group and others just list them with other fixed-income securities.

2. specifying a minimum, maximum or range of percent of assets that are allowed or required for mortgages or real estate. Percentages stated in terms of real estate, rather than in mortgages, will still encourage mortgage investments because mortgages are the easiest way for pension plans to invest in real estate.

3. encouraging in-state investments. This tends to encourage mortgage holdings because mortgages are a convenient way to invest in-state. It is relatively easy to form pools of mortgages that are all originated in the same state.

> *"Although the average maturity of mortgage-backed securities can be estimated from experience, periods of sharply lower interest rates create significant reinvestment risk for mortgage holders."*

Study of policy statements

In July 1986, the author began a study to determine the extent to which trustee and manager attitudes toward mortgage securities are reflected in their investment policy statements. The study also investigated the relationship between policy statement treatment of mortgages and actual mortgage holdings.

The author asked 90 state retirement systems for a copy of their investment policy statements in order to determine the extent of policy directions regarding mortgage investments. There were 42 replies from 32 states. These statements covered over 60 separate plans with total assets of $203 billion, which was about 60 percent of the assets of all state pension plans at the time of the survey.

Most responses were in the form of policy statements, but some systems furnished copies of statues because their investment policies are spelled out in law. In other instances, respondents forwarded state regulations and annual reports which contained their investment policy.

An analysis of both these statements and the mortgage assets of the funds forms the basis of the article. The author reviewed all statements and tabulated the number that authorized mortgages as an investment, the number that specified or allowed a certain percent of assets (minimum, maximum or range) to be invested in mortgage securities or real estate, and the number that encouraged in-state investments with or without a specific reference to mortgages.

Findings

An unexpected discovery of this study was the almost total absence of state statutory requirements regarding mortgage investments. Only California has such a requirement. Several years ago the California legislature mandated that California systems invest 25 percent of all new contributions in mortgages on California property. Apparently no other state has a similar law.[2]

Only the policy statements of Alaska actually required a minimum amount of mortgage securities. The Alaska plan statements required a minimum of 10 percent of plan assets to be in mortgages but not necessarily in Alaska mortgages.

An analysis of all 42 policy statements is summarized in Table 3. The table compares the mortgage holdings of plans who policy statements mention mortgages with those whose policy statements do not encourage mortgages. As noted on the table, there is considerable overlap among the categories of policy statements that encourage mortgages; that is, a number of plans encouraged mortgages in more than one way.

The summary in Table 3 indicates that plans with policy statements that authorize mortgage investments, suggest percentages of assets to be invested in mortgages or real estate, and support in-state investments (Categories A, B and C) do invest more in mortages than other plans, i.e., plans with policy statements that do not encourage mortgage investments (Category D). Furthermore, the use of percentages and the support of in-state investments (Categories B and C) apparently have a stronger positive relationship with mortgage investments than just the authorization of mortgages as an investment (Category A).

Conclusion

State pension plans invest a higher percent of their assets in mortgage securities than do private plans, and it seems that they really are serious about maintaining a

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easy but it is possible. "The fathers of venture capital tell us that you have to wait 10 years to determine what the return on a partnership is," he suggests. "They are absolutely right and I won't argue with them. I am not, however, aware of any senior corporate manager who will stand still for that. They want to know how things are going."

AT&T has a two-pronged approach to monitoring performance. It does compute monthly performance of a portfolio of partnership investments. These are linked for quarterly rates and annual rates of return.

"We measure the investment managers and our company-directed account in the same manner as we measure the performance of stock and bond managers," he says. "We are not overly concerned about a quarterly or annual rate."

Cash is excluded from the calculations. He says that when cash is given to a stock or bond manager, it can be put to work in those markets immediately. The manager's decision to hold cash is an investment decision. On the other hand, when money is given to a venture capital manager, cash may sit in that account for future cash calls or other reasons—it is really not part of an investment decision.

AT&T computes the internal rate of return for each partnership from inception to date. This return is based on actual cash flows. It excludes the general partners' carry and it excludes fees and expenses paid to the partnership.

AT&T instituted what it terms the "vintage year" concept. "What we have done is taken all of the partnerships that we invested in either directly or through investment managers in a given year. All of the partnerships where the first cash call was made in 1980, for example, are combined and treated as if they were one investment. We then calculate the internal rate on that 'investment.' We include all of the cash flows. We look at the terminal value on June 30th and that is the number we have on our books. It is like trying to appraise real estate."

Choosing a partnership

Richard W. Worthing, vice president-equity investments, the St. Paul Companies Inc., says that his firm's venture capital operation has about $100 million committed, $41 million taken down—all of it in partnerships. The plan is to move the partnership portfolio up to $250 million to $300 million in the future and also to move into direct investment.

In deciding on a partnership, Mr. Worthing asks a lot of questions. "We want good returns a number of years out. Our needs really involve diversifying our portfolio across a variety of stages of investment and a variety of industry types."

When he is contacted about a new partnership, he has specific criteria that he looks at. "We look at the focus of the fund. Does it do what we need in terms of diversification? Does it make sense in terms of the marketplace and in terms of pricing?"

Mr. Worthing wants to know if the people handling the partnership have experience in their particular focus or are simply running from what used to be the computer business to the medical business because that is hotter and not so risky.

"We look at whether or not they are practicing venture capitalists," he continues. "Do they add positive value to the companies they are involved with?

"Do the venture capitalists have a substantial record in terms of performance? We have invested in a number of first funds but everyone we have invested with has a record—either within a corporate or in another business setting."

The St. Paul Companies looks for significant deal flow. If it is a special purpose fund, it wants to see that the deal flow is concentrated in that area.

"I check their references with people who are not on the list of references they furnish," he says. "I presume they are all good references but I want to talk with prior bosses, bankers who funded LBOs that they did. I want to talk with people who worked with them in a negotiating sense to see how they are to deal with."

Plan sponsors who have moved into venture capital investments stress that while it is important to do the homework on the investment itself, it is equally important to feel fully comfortable about the people with whom you are dealing because the time frame of the investment is long and because venture capital is really a people business. ☐

Mortgage-backed securities

Continued from page 25

substantial position in mortgages. Many state plans mention mortgages and real estate in their policy statements, either directly or indirectly, and these plans do invest more in mortgage securities. The additional percentages are significant, although there is substantial variation within the categories that encourage mortgages.

The state plans that invest the most in mortgage securities are those which authorize mortgage investments and also suggest some sort of percentage of assets for mortgages or real estate, have a policy of making in-state investments, or both. These policies have a more pronounced effect than just authorizing mortgages. ☐

FOOTNOTES

1. *Prospects for Financial Markets in 1986,* Salomon Brothers, New York, December 1986, p. 59, Table 6.

2. *Public Pension Plans: The State Regulatory Framework,* National Council on Teacher Retirement, p. 32.

Clarence C. Elebash teaches investments and financial markets at the University of West Florida in Pensacola. He has served as trustee of a municipal pension fund for a number of years and has published a series of articles on pension fund investments. He holds degrees from the U.S. Military Academy, the University of Michigan Graduate School of Business and Florida State University. He is a Chartered Financial Analyst and a Certified Management Accountant.

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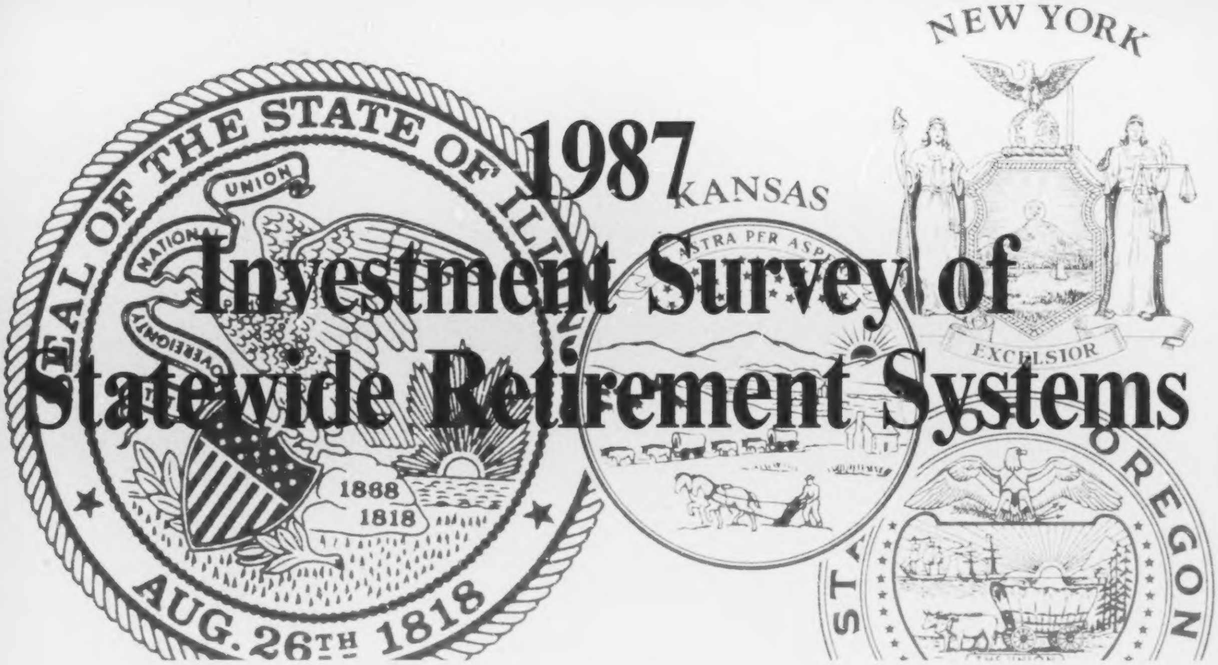

1987 Investment Survey of Statewide Retirement Systems

Pension World is pleased to resume publication of its Investment Survey of Statewide Retirement Systems in this issue. The survey provides information on the investment practices of public employee retirement systems, teacher and school employee retirement systems, police and firefighter retirement systems and local government employee systems. It does not cover systems of cities or individual municipalities.

In March 1987 we sent out questionnaires to 130 statewide systems. Of these, 61 questionnaires were returned, representing 66 systems in 42 states. The respondents included 24 statewide public employee retirement systems, 15 educational retirement systems, 15 "umbrella" systems and seven systems not falling into these categories.

Asset size ranged from $74.2 million for the Georgia Peace Officers' A&B Fund to $30.5 billion for the California Public Employees Retirement System. Because some systems reported assets at cost while others used market figures, we cannot sum total assets represented in the survey.

All but five of the systems reporting (two each in Indiana and West Virginia and one in South Carolina) invest in common and preferred stock. When this asset class is used, in all but nine funds it is the largest asset class. All but four respondents said they had investments in U.S. government securities and agencies. The other four grouped fixed income investments into one category.

Other investments used by most funds include corporate bonds, mortgages, other real estate investments, and short-term instruments and cash. Some funds also use guaranteed investment contracts, international investments (equity and fixed income), leveraged buyout funds and venture capital investments.

Forty-six funds have at least some internal management. In some cases this is limited to short-term cash management. Thirteen of the 46 funds are 100 percent internally managed.

Of the funds that use discretionary investment managers, the Virginia Supplemental Retirement System tops the list with 35, as well as internal managers. Other systems with a large number of outside investment managers are the Pennsylvania State Employees' Retirement System (30) and the Delaware State Employees' Retirement Fund, the Iowa Public Employees Retirement System, the New York State Employees' Retirement System/New York State Policemen's and Firemen's Retirement System and the Pennsylvania State Employees' Retirement System (28 each).

The following listings are based on information provided by the individual funds. While we have attempted to prepare this information as carefully as possible, *Pension World* assumes no responsibility for the accuracy of information presented here.

RETIREMENT SYSTEMS OF ALABAMA

135 South Union St.
Montgomery, AL 36130
Contact: Dr. David G. Bronner, Chief Executive Officer, (205) 261-5718

Information current as of 9/30/86

Total assets: $6.2 billion
Common and preferred stock: $405 million
U.S. government securities and agencies: $146.9 million
Corporate bonds: $2.5 billion
Mortgages: $1.3 billion—privately held, $361.9 million; government backed, $970 million
Cash and short-term securities: $844.4 million
Other investments: Canadian Bonds, $154.7 million; Guaranteed Investment Contracts, $20 million
Percent of fund internally managed: 100%
Investment advisors: AmSouth Bank

ALASKA RETIREMENT SYSTEMS

Treasury Division, Department of Revenue
P.O. Box 5B
Juneau, AK 99811
Contact: Kenneth L. Shaffer, State Investment Officer, (907) 465-2351

Information current as of 12/31/86; all figures at market value

Total assets: $3 billion
Common and preferred stock: $989 million
U.S. government securities and agencies: $766 million
Corporate bonds: $322 million
Mortgages: $352 million—privately held
Other real estate: $165 million
Cash and short-term securities: $428 million
Other investments: Included in common stocks is $223 million of international common stocks
Percent of fund internally managed: 62%
Discretionary investment managers: Fred Alger Mgmt.; Invesco Capital Mgmt.; Lehman Management Inc. (domestic); and Citicorp N.A. London and J. P. Morgan Investment Ltd. London (international)

ARIZONA STATE RETIREMENT SYSTEM

P.O. Box 33910
Phoenix, AZ 85067
Contact: Max Sullivan, Director, (602) 255-5131

Information current as of 6/30/86

Total assets: $4.6 billion
Common and preferred stock: $2 billion
U.S. government securities and agencies: $1.6 billion
Corporate bonds: $299.7 million
Mortgages: $225.2 million
Cash and short-term securities: $527.7 million
Percent of fund internally managed: 5% (short-term cash only)
Discretionary investment managers: Bernstein-Macaulay; Criterion Investment Management; Duff & Phelps Investment Mgmt.; Fiduciary Trust Co.; Invesco Capital Management; Kemper Financial Services; Valley National Bank; Wells Fargo Investment Advisors; State Street Bank & Trust Co.; Warburg Investment Management International Ltd.
Investment advisors: SEI Funds Evaluation Services; Wilshire Associates

ARKANSAS STATE HIGHWAY EMPLOYEES RETIREMENT SYSTEM

P.O. Box 2261
Little Rock, AR 72203
Contact: J. E. McCarthy, Executive Secretary, (501) 569-2412

Information current as of 3/31/87

Total assets: $214 million
Common and preferred stock: $79 million
U.S. government securities and agencies: $67 million
Corporate bonds: $58 million
Cash and short-term securities: $5 million
Other investments: Capital bank notes, $1 million
Percent of fund internally managed: 100%
Investment advisors: Loomis Sayles & Co., Inc.

ARKANSAS TEACHER RETIREMENT SYSTEM

Education Bldg. West
#3 Capitol Mall
Little Rock, AR 72201
Contact: Mrs. Mavolene C. Booth, Retirement Fund Investment Manager, (501) 371-1517

Information current as of 2/28/87

Total assets: $1.5 billion
Common and preferred stock: $529 million, convertible corporate bonds $2.9 million
U.S. government securities and agencies: $529.7 million
Corporate bonds: $104 million
Mortgages: $65.3 million—privately held, $56.7 million; government backed, $8.6 million
Cash and short-term securities: $228.7 million
Other investments: $611.4 thousand
Percent of fund internally managed: 15% (short-term)
Investment advisors: Oppenheimer Capital Corporation; First Commercial Bank

CALIFORNIA PUBLIC EMPLOYEES RETIREMENT SYSTEM

P.O. Box 2749
Sacramento, CA 95812
Contact: Greta Marshall, Investment Manager, (916) 326-3400

Information current as of 6/30/86

Total assets: $30.5 billion
Common and preferred stock: $7.9 billion
U.S. government securities and agencies: $2.7 billion
Corporate bonds: $5.8 billion
Mortgages: $10.6 billion—privately held, $3.3 billion; government backed, $7.3 billion
Other real estate: $1 billion
Cash and short-term securities: $1.9 billion
Other investments: $0.6 billion
Percent of fund internally managed: 90%
Discretionary investment managers: Atalanta-Sosnoff; Citicorp, Lazard Freres; Batterymarch; Rosenberg; Fidelity Bank; TSA; Dimensional Fund; First Chicago
Investment advisors: Heitman Realty; Richard Ellis; TCW Realty; FIA; Equitable; LaSalle

CALIFORNIA STATE TEACHERS' RETIREMENT SYSTEM

P.O. Box 15275-C
Sacramento, CA 95851
Contact: Larry D. Kurmel, Chief Executive Officer, (916) 386-3700

Information current as of 6/30/86; all figures at market value

Total assets: $20 billion
Common and preferred stock: $9.5 billion
U.S. government securities and agencies: $1.1 billion
Corporate bonds: $3.8 billion
Mortgages: $3.1 billion
Other real estate: $527.5 million
Cash and short-term securities: $2 billion
Other investments: $1.3 million
Discretionary investment managers: Denver Investment Advisors; Equitable Investment Management; Provident Investment Counsel; Wright Investors Service; Pilgrim, Baxter, Hoyt & Greig; Barrow, Hanley, Mewhinney & Strauss; Provident Capital Management; Trinity Investment Management; Wilmington Capital Management; Wells Fargo; Dimensional Fund Advisors; TCW Asset Management; Loomis Sayles & Company; Manufacturers Hanover Investment Corporation; Miller, Anderson & Sherrerd; Pacific Investment Management Corporation; Scudder, Stevens & Clark; T. Rowe Price Associates, Inc.; Stein Roe & Farnham
Investment advisors: Wilshire Associates; Pension Real Estate Services, Inc.; Eastdil Realty

PUBLIC EMPLOYEES' RETIREMENT ASSOCIATION OF COLORADO

1300 Logan St.
Denver, CO 80203
Contact: Norman Benedict, Deputy Executive Director, (303) 832-9550

Information current as of 12/31/86

Total assets: $6.3 billion (cost)
Common and preferred stock: $2.4 billion (cost)
U.S. government securities and agencies: $1.6 billion (cost)
Corporate bonds: $498.3 million (cost)
Mortgages: $606.2 million—privately held
Other real estate: $311.1 million
Cash and short-term securities: $612.7 million
Other investments: Guaranteed Insurance Contract $122 million (market)
Percent of fund internally managed: 100%
Investment advisors: Bankers Trust; Provident National Bank

COLORADO FIRE & POLICE PENSION ASSOCIATION

5290 DTC Pkwy.
Englewood, CO 80111
Contact: David A. Powers, Executive Director, (303) 770-3772

Information current as of 3/31/87; all figures at market value

Total assets: $488.5 million
Common and preferred stock: $233.6 million
U.S. government securities and agencies: $107.1 million
Corporate bonds: $41 million
Mortgages: $4.7 million—privately held, $245.9 thousand; government-backed, $4.5 million
Other real estate: $39.2 million
Cash and short-term securities: $62.8 million
Other investments: Venture capital, $800 thousand
Percent of fund internally managed: 15%
Investment advisors: Dremen Capital; Nicholas Applegate; Oppenheimer Capital; Wells Fargo; Investment Advisors; Bollinger & Company; Putnam Advisory; Delaware Investment Advisors and Mellon Real Estate Investment

CONNECTICUT TRUST FUNDS
OFFICE OF THE TREASURER

20 Trinity St.
Hartford, CT 06106
Contact: F. P. McDermott, Deputy Treasurer-Investments, (203) 566-2166

Information current as of 2/28/87

Total assets: $5.4 billion
Common and preferred stock: $2.5 billion
U.S. government securities and agencies: $710 million
Corporate bonds: $710 million
Mortgages: $397.6 million—privately held, $42.6 million; government backed, $355 million
Other real estate: $648.6 million
Cash and short-term securities: $403.4 million
Other investments: GICs, $71.2 million
Percent of fund internally managed: 30%
Discretionary investment managers: Total, 30 — 14 in equities; 6 in fixed income and 10 in equity real estate

DELAWARE STATE EMPLOYEES' RETIREMENT FUND

P.O. Box 1401
Dover, DE 19903
Contact: Theodore H. Ashford, (302) 655-1750

Information current as of 6/30/86

Total assets: $1 billion
Common and preferred stock: $187.1 million
U.S. government securities and agencies: $9.6 million
Corporate bonds: $54.2 million
Real estate: $115.1 million
Cash and short-term securities: $192.1 million
Other investments: Pooled equity & fixed income, $425 million; Venture capital, $24.8 million
Discretionary investment managers: Bonds—Atlanta Capital Management Co.; Convertible Securities—Alliance Capital Management; Equity-Linked Investors, L.P.; Froley, Revy Investment Company; Fixed Income—Aetna Life Insurance Company; Mellon Capital Management; T. Rowe Price Associates, Inc.; Real Estate—Aetna Life Insurance Company; Citibank, N.A.; John Hancock; Stocks—Batterymarch Financial Management; Dawson-Henry Capital Management; Lincoln Capital Management; N. M. Rothschild Int'l Asset Management; T. Rowe Price Associates, Inc.; Tower Capital Management; Trinity Investment Management Corp.; Stocks & Bonds—Mellon Capital Management; Wells Fargo Bank, N.A.; Venture Capital—Accel Partners; Arscott, Norton & Associates; Brentwood Associates; Cherry Tree Ventures; Dougery, Jones & Wilder; Julian, Cole & Stein; Morgan Holland; Threshold Fund; Venad

FLORIDA STATE BOARD OF ADMINISTRATION

P.O. Drawer 5318
Tallahassee, FL 32314-5318
Contact: Fred E. Loopman, Acting Executive Director, (904) 488-4406

Information current as of 3/31/87; all figures at cost

Total assets: $11.4 billion
Common and preferred stock: $5.5 billion (book value)
U.S. government securities and agencies: $3.5 billion (including mortgages)
Corporate bonds: $1.1 billion (public & private)
Mortgages: $407.7 million—government backed
Other real estate: $487.8 million
Cash and short-term securities: $376.5 million
Other investments: Foreign fixed income (governments) $315.6 million, GICs $63.7 million, Convertibles $10.6 million
Percent of fund internally managed: 46%
Discretionary investment managers: Aetna Life Insurance, Alliance Capital Management, Ariel Capital Management, Barnett Banks Trust Company, Barrow, Hanley, Mewhinney & Strauss, Bear Stearns Asset Management, Delaware Investment Advisors, Denver Investment Advisors, Eagle Asset Management, Equitable Life Assurance Society, First National Bank of Chicago, Fred Alger Management Company, Goldman Sachs, IDS Growth Spectrum Advisors, John Hancock Mutual Life, Invesco Capital Management, LaSalle Partners, Lazard Freres Asset Management, Prudential Asset Management, Stein Roe and Farnham, Inc., Sun Bank and Trust Company, Wells Fargo Investment Advisors, Westwood Management Corporation
Investment advisors: Fourteen Research; Pradilla & Kerschner; Wells Fargo

GEORGIA STATE RETIREMENT SYSTEMS, DIV. OF INVESTMENT SERVICES

Two Northside 75
Atlanta, GA 30381
Contact: Graham R. Lynch, Director, (404) 656-2174

Information current as of 3/31/87

Total assets: $7.5 billion
Common and preferred stock: $2.6 billion (all common)
U.S. government securities and agencies: $2.8 billion
Corporate bonds: $1.6 billion
Mortgages: $32.1 million—privately held
Other real estate: $3.9 million
Cash and short-term securities: $425.4 million
Percent of fund internally managed: 100%
Investment advisors: C&S Investment Advisors; First Wachovia Investment Management; Trusco Capital Management; Invesco Capital Management; Thorndike, Doran, Paine & Lewis

TEACHERS RETIREMENT SYSTEM OF GEORGIA

Two Northside 75, Suite 400
Atlanta, GA 30381
Contact: Graham Lynch, Director, Investment Services, (404) 656-2151

Information current as of 2/28/87

Total assets: $5.4 billion
Common and preferred stock: $1.9 billion
U.S. government securities and agencies: $3.1 billion
Mortgages: $25 million
Other real estate: $1 million
Cash and short-term securities: $290 million
Percent of fund internally managed: 65%
Investment advisors: Citizens & Southern National Bank; Invesco Capital Management, Inc.; Trusco Capital Management; Thorndike, Doran, Paine and Lewis

PEACE OFFICERS' A&B FUND

P.O. Box 56
Griffin, GA 30224
Contact: Flynt Langford, (404) 228-8461

Information current as of 2/28/87

Total assets: $74.2 million
Common and preferred stock: $13.9 million
U.S. government securities and agencies: $20.6 million
Corporate bonds: $18.7 million
Mortgages: $65.7 thousand
Cash and short-term securities: $21 million
Discretionary investment manager: Thorndike, Doran, Paine & Lewis

GEORGIA FIREMEN'S PENSION FUND

720 Church St.
P.O. Box 1623
Decatur, GA 30030
Contact: James Stewart, Secretary/Treasurer, (404) 656-2030

Information current as of 2/28/87

Total assets: $80.4 million
Common and preferred stock: $25.4 million
U.S. government securities and agencies: $27.2 million
Corporate bonds: $1.9 million
Mortgages: $574.3 thousand—privately held
Other real estate: $125 thousand
Cash and short-term securities: $25.2 million
Percent of fund internally managed: 2.4%
Discretionary investment manager: First Wachovia Corp.
Investment advisors: First Wachovia Corp.

STATE OF HAWAII, EMPLOYEES' RETIREMENT SYSTEM

888 Mililani St., Suite 502
Honolulu, HI 96813
Contact: Stanley Siu, Executive Secretary, (808) 548-7593

Information current as of 12/31/86

Total assets: $2.9 billion
Common and preferred stock: $909.1 million
U.S. government securities and agencies: $648.5 million
Corporate bonds: $331 million
Mortgages: $383 million—privately held
Other real estate: $120 million
Cash and short-term securities: $281.6 million
Other investments: GICs - $120 million, Capital Notes - $44 million, U.S. Gov't. - $32.2 million
Percent of fund internally managed: 40%
Investment advisors: Alliance Capital Management Corp.; Atalanta/Sosnoff Capital Corp.; Barrow, Hanley, Mewhinney & Strauss, Inc.; Bernstein-Macaulay, Inc.; Delaware Investment Advisers, Inc.; Fayez Sarofim and Co.; Hanson Investment Management Co.; Invesco Capital Management; Lehman Management Co., Inc.; McCowan & Associates, Inc.; Mellon Capital Management Corp.; Pacific Investment Management Co.; Scudder, Stevens & Clark, Inc.; Security Pacific Investment Managers; Wentworth, Hauser and Violich

PUBLIC EMPLOYEE RETIREMENT SYSTEM OF IDAHO

820 Washington St.
Boise, ID 83702
Contact: Bill Reese, Controller, (208) 334-3365

Information current as of 12/31/86

Total assets: $1.1 billion
Common and preferred stock: $453.2 million
U.S. government securities and agencies: $31.2 million
Corporate bonds: $250.4 million
Mortgages: $69.5 million—privately held, $68.1 million; government backed, $1.4 million
Other real estate: $75.7 million
Cash and short-term securities: $184.4 million
Other investments: $45.4 million
Investment advisor: Frank Russell Trust Company

ILLINOIS STATE BOARD OF INVESTMENT

180 North LaSalle Street, Suite 2015
Chicago, IL 60601
Contact: Robert J. Harmon, Director, (312) 793-5710

Information current as of 12/31/86

Total assets: $2.4 billion
Common and preferred stock: $908 million
U.S. government securities and agencies: $539 million
Corporate bonds: $459 million
Mortgages: $5 million—privately held
Other real estate: $161 million
Cash and short-term securities: $231 million
Other investments: $282 million
Percent of fund internally managed: 70%
Investment advisors: Ariel, Cooke & Bieler; Disciplined; Fidelity; Lazard Freres; Lincoln Capital; Newbold's; Rothschild; Trinity; Trust Company of the West

ILLINOIS STATE UNIVERSITIES RETIREMENT SYSTEM

50 Gerty Dr.
Champaign, IL 61820
Contact: Kenneth E. Codlin, Investment Officer, (217) 333-3860

Information current as of 3/31/87; all figures at market value

Total assets: $2.9 billion
Common and preferred stock: $1.7 billion
U.S. government securities and agencies: $150 million
Corporate bonds: $200 million
Mortgages: $300 million—government backed
Other real estate: $260 million
Other investments: Commingled Bond Index Fund tracks Salomon Broad, $270 million; GIC $10 million
Discretionary investment managers: 2 equity; 1 fixed income; 2 real estate; 1 passive
Investment advisor: Ennis, Knupp & Associates

INDIANA PUBLIC EMPLOYEES' RETIREMENT FUND

143 W. Market St., Suite 800
Indianapolis, IN 46204
Contact: L. H. Earle II, Executive Sec., (317) 232-1615

Information current as of 2/28/87

Total assets: $2 billion
U.S. government securities and agencies: $900.5 million
Corporate bonds: $902.6 million
Mortgages: $124.6 million—government backed
Cash and short-term securities: $120 million
Discretionary investment managers: Banc One Indiana; Indiana National Bank; T. Rowe Price; Lehman Management Co.; Prime Capital Management

INDIANA STATE TEACHERS' RETIREMENT FUND

506 State Office Building
Indianapolis, IN 46204
Contact: Robert D. Newland, Investment Officer, (317) 232-3868

Information current as of 2/28/87; all figures at book value

Total assets: $1.3 billion
U.S. government securities and agencies: $489 million
Corporate bonds: $319 million
Mortgages: $403 million—government backed
Cash and short-term securities: $119 million
Discretionary investment managers: Alliance Capital Management; American Fletcher National Bank; Bank of New York; Indiana National Bank; Baxter & Hoops; Merchant Investment Counseling
Investment advisor: Todd Investment Advisors

IOWA PUBLIC EMPLOYEES RETIREMENT SYSTEM

600 E. Court
P.O. Box 9117
Des Moines, IA 50306
Contact: Larry Thompson, Investment Officer, (515) 281-5224

Information current as of 1/31/87; all figures at market value

Total assets: $3.7 billion
Common and preferred stock: $1.3 billion
Total fixed income: $2.2 billion
Real estate: $111.3 million
Cash and short-term securities: $23.9 million
Other investments: Venture capital, $5.3 million; KKR-LBO, $14.7 million
Percent of fund internally managed: 1%
Discretionary investment managers: Fixed income managers (long bonds) - J. P. Morgan Investment Management, Inc.; Loomis, Sayles & Company. Fixed income managers (active bonds) - The Boston Co.; Criterion Investment Management Co. Fixed income managers (mortgage bonds) - Miller, Anderson & Sherrerd. Equity managers (active diversified) - Capital Guardian Trust Co.; Wellington Management Co. Equity managers (active aggressive) - Provident Capital Management, Inc. Equity managers (complementary) - Batterymarch Financial Management; IDS Growth Spectrum Advisors; Prudential Asset Management Co.; Rosenberg Capital Management; Value Investors, Inc.; Mellon Capital Management. Equity Real Estate Pools - Copley Real Estate Advisory; Heitman Advisory; JMB Institutional Realty Corp.; Aldrich, Eastman & Waltch. Venture Capital Funds - R. W. Allsop & Associates; Cable & Howse Ventures; Steinberg & Lyman; Lawrence Venture Associates; Interven Partners; Invest America. LBO Funds - Kohlberg, Kravis, Roberts & Co.; TCW Special Placements Fund; Gibbons, Green, van Amerongen. Consultant - Wilshire Associates.
Investment advisor: Wilshire Associates

KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM

Capitol Tower - 2nd Fl.
400 W. 8th
Topeka, KS 66603
Contact: Marshall Crowther, Executive Secretary, (913) 232-6665

Information current as of 3/31/87; all figures at cost

Total assets: $2.8 billion
Common and preferred stock: $1 billion
U.S. government securities and agencies: $539.7 million
Corporate bonds: $453.4 million
Mortgages: MGIC pass-through $65.7 million
Other real estate: $59 million
Cash and short-term securities: $490.4 million
Other investments: Miscellaneous, $46 million; international equity, $63.1 million
Discretionary investment managers: Equity managers - Capital Supervisors; Investment & Capital Management; Pilgrim, Baxter & Greig; Provident Investment Counsel; Market Research & Management; Reimer & Koger Associates. Fixed income managers - Peters, Gamm & West; Pacific Investment Management Co.; Robert C. Brown & Co. Real Estate - J. W. O'Connor. International equity - Alliance Capital Management; Nomura Capital Management Private placements - Reimer & Koger; Peters Gamm & West. Domestic custodian - Commerce Bank & Trust. International custodian - Bankers Trust.

KENTUCKY RETIREMENT SYSTEMS

1260 Louisville Rd.
Frankfort, KY 40601
Contact: Bobby J. McKee, General Manager, (502) 564-4646

Information current as of 2/28/87; all figures at book value

Total assets: $2 billion
Common and preferred stock $595.7 million
U.S. government securities and agencies: $280.2 million
Corporate bonds: $237.5 million
Mortgages: $362.6 million—government backed
Other real estate: $74.6 million
Cash and short-term securities: $439.7 million
Percent of fund internally managed: 32%
Investment advisors: Capital Supervisors Inc., balanced advisor; Munder Capital Management Inc., fixed income advisor; Heitman Advisory Ltd., real estate

KENTUCKY TEACHERS' RETIREMENT SYSTEM

216 W. Main Street
Frankfort, KY 40601
Contact: Stuart Reagan, Deputy Executive Secretary, (502) 564-2057

Information current as of 2/28/87

Total assets: $2.4 billion
Common and preferred stock: $648.4 million
U.S. government securities and agencies: $812.8 million
Corporate bonds: $319.7 million
Mortgages: $232 million—government backed
Other real estate: $35.4 million
Cash and short-term securities: $325.9 million
Percent of fund internally managed: 8%
Investment advisors: Todd Investment Advisors; Invesco Capital Mgmt.; First Kentucky Co.

LOUISIANA SCHOOL EMPLOYEES' RETIREMENT SYSTEM

P.O. Box 44516, Capitol Station
Baton Rouge, LA 70804
Contact: Dr. Larry D. Quisenberry, Secretary-Treasurer, (504) 925-6484

Information current as of 12/31/86; all figures at market value

Total assets: $526.3 million
Common and preferred stock: $5.8 million
U.S. government securities and agencies: $279.4 million
Corporate bonds: $216.1 million
Mortgages: $6.7 million—government backed
Cash and short-term securities: $18.3 million
Percent of fund internally managed: 10%
Investment advisor: Hibernia National Bank

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

301 W. Preston St.
Baltimore, MD 21201-2363
Contact: Howard J. France, Executive Director, State Investment Agency, (301) 225-1020

Information current as of 2/28/87; all figures at book value

Total assets: $6.6 billion
Common and preferred stock: $2.9 billion
U.S. government securities and agencies: $1 billion
Corporate bonds: $470.7 million
Mortgages: $943.7 million—privately held, $31.7 million; government backed, $879.1 million
Other real estate: $25 million
Cash and short-term securities: $319.8 million
Percent of fund internally managed: 48%
Discretionary investment managers: Fixed income—Investment Counselors; Mercantile Safe Deposit; Miller, Anderson & Sherrerd; Morgan Stanley Asset Management; Pacific Investment Management; Standish, Ayer & Wood; State Investment Agency. Large cap growth—Alliance Capital Management; Atalanta Capital; Eaton Vance; Investment Adviser; Mackay Shields. Large cap value—Capital Guardian, Hagler Mastrovita, Investment Counselors, State Street Bank & Trust. Small cap—DFA 6-7-8, DFA small company, Scudder Stevens & Clark, Wellington Trust.

STATE EMPLOYEES RETIREMENT SYSTEM OF MASSACHUSETTS

One Ashburton Place, Room 1219
Boston, MA 02108
Contact: James W. Callanan, Executive Secretary, (617) 367-7770

Information current as of 2/28/87

Total assets: $3.7 billion
Common and preferred stock: $1.2 billion
U.S. government securities and agencies: $534 million
Corporate bonds: $644 million
Mortgages: $500 million—government backed
Other real estate $23 million
Cash and short-term securities: $50 million
Other investments: Venture Capital, $15 million
Percent of fund internally managed: 70%
Discretionary investment managers: Eaton Vance Management; Gardner & Preston Mass; Independence Investment Associates; Hagler, Mastrovita & Hewitt; Invesco Capital Management
Investment advisors: Allan Fulkerson; Massachusetts Fiduciary Advisors, Inc.

MASSACHUSETTS TEACHERS & EMPLOYEES PENSION

One Ashburton Place, Room 1203
Boston, MA 02108
Contact: Alan West, Chief Investment Officer, (617) 367-3900, Ext. 220

Information current as of 12/31/86

Total assets: $3.5 billion
Common and preferred stock: $1 billion
U.S. government securities and agencies: $1.1 billion
Corporate bonds: $650 million
Mortgages: $450 million—government backed
Other real estate: $30 million
Cash and short-term securities: $60 million
Percent of fund internally managed: 90%
Discretionary investment managers: Endowment; Fiduciary Trust; Gardner Preston Mass; Loomis Sayles, Miller Anderson
Investment advisor: Massachusetts Fiduciary Advisors Inc.

BUREAU OF INVESTMENTS, MICHIGAN DEPT. OF TREASURY

(Includes Public School Employees Retirement System; State Employees Retirement System; State Police Pension, Accident and Disability Fund; Judges Retirement System; and Probate Judges' Retirement System)

P.O. Box 15128
Lansing, MI 48901
Contact: W. A. Amerman, Director of Investments, (517) 373-3140

Information current as of 2/28/87; all figures at market value

Total assets: $15 billion
Common and preferred stock: $6.8 billion
U.S. government securities and agencies: $2.5 billion
Corporate bonds: $1.6 billion
Mortgages: $1.5 billion—privately held, $217 million; government backed, $1.2 billion
Other real estate: $82 million
Cash and short-term securities: $2.7 billion
Percent of fund internally managed: 100%

PUBLIC EMPLOYEES RETIREMENT SYSTEM OF MISSISSIPPI

429 Mississippi St.
Jackson, MS 39201-1005
Contact: Eddie B. Vandiver, Deputy Director/Investments, (601) 359-2255

Information current as of 3/31/87; figures at market value

Total assets: $3.1 billion
Common and preferred stock: $888.5 million
U.S. government securities and agencies: $1.5 billion
Corporate bonds: $366 million
Cash and short-term securities: $300 million
Percent of fund internally managed: 10% (short-term and cash)
Discretionary investment managers: Dreyfus Management, Inc.; Lehman Management Co.; Pacific Investment Management Co.; Bankers Trust Co.; Invesco Capital Management, Inc.; Sun Bank, N.A.; Criterion Investment Management Co.; Manufacturers Hanover Investment Co.; Wells Fargo Investment Advisors; Fayez Sarofim & Co.; The Boston Co.

MISSOURI STATE EMPLOYEES' RETIREMENT SYSTEM

906 Leslie Blvd.
Jefferson City, MO 65101
Contact: Rosemary Eppenauer, Acting Executive Director, (314) 751-2342

Information current as of 2/27/87; all figures at cost

Total assets: $955.7 million
Common and preferred stock: $430.1 million
U.S. government securities and agencies: $67.1 million
Corporate bonds: $135.4 million
Mortgages: $35.6 million—privately held, $29.8 million; government backed, $5.8 million
Other real estate: $61.8 million
Cash and short-term securities: $218.8 million
Other investments: Venture capital, $6.9 million
Discretionary investment managers: Centerre Trust Co.; Loomis Sayles & Co., Inc.; Wentworth, Hauser & Violich Investment Counsel; Investors Research Corp.; Waddell & Reed Asset Management Co.; Alliance Capital Management Corp.; Delaware Investment Advisors; First Chicago Investment Advisors; Eastdil Advisors, Inc.

PUBLIC SCHOOL RETIREMENT SYSTEM OF MISSOURI

P.O. Box 268
Jefferson City, MO 65102

Information current as of 6/30/86; all figures at market value

Total assets: $3.8 billion
Common and preferred stock: $570.3 million
U.S. government securities and agencies: $764 million
Corporate bonds: $1.4 billion
Mortgages: $842.3 million—government backed
Cash and short-term securities: $198.8 million
Discretionary investment manager: Boatmens' National Bank
Investment advisor: Demarche Associates

LOCAL GOVERNMENT EMPLOYEES RETIREMENT SYSTEM OF MISSOURI

1913 William St.
P.O. Box 1665
Jefferson City, MO 65102
Contact: William R. Schwartz, Executive Secretary, (314) 751-3666

Information current as of 6/30/86

Total assets: $395 million
Common and preferred stock: $132 million
U.S. government securities and agencies: $120 million
Corporate bonds: $64 million
Mortgages: $52 million—government backed
Cash and short-term securities: $27 million
Investment advisors: Centerre Trust Co.; Delaware Investment Advisers; Hoisington Investment Management; Invesco Capital Management; Investment Advisers; Lehman Management Co.; Loomis, Sayles and Co.; United Missouri Investment Counsel Service

MONTANA PUBLIC EMPLOYEES' RETIREMENT DIVISION

1712 Ninth Ave.
Helena, MT 59601
Contact: Board of Investments, (406) 442-1970

Information current as of 3/31/87

Total assets: $605.5 million
Common and preferred stock: $58.8 million
U.S. government securities and agencies: $72.7 million
Corporate bonds: $300 million
Mortgages: $57.7 million
Other real estate: $252 thousand
Cash and short-term securities: $9 million
Other investments: Short-term investment pool - $55.4 million; long-term securities on loan - $31.1 million
Percent of fund internally managed: 100%

MONTANA TEACHERS' RETIREMENT SYSTEM

1500 6th Ave.
Helena, MT 59620
Contact: Board of Investments, (406) 442-1970

Information current as of 6/30/86

Total assets: $444.4 million
Common and preferred stock: $50.8 million
U.S. government securities and agencies: $54.7 million
Corporate bonds: $201.5 million
Mortgages: $54.6 million
Other real estate: $161.8 thousand
Cash and short-term securities: Cash, $8.2 million. Remaining assets—Accounts Receiva-

ble, $4.9 million; interest receivable, $8.2 million
Other investments: Securities, $53.6 million; deferred losses, $7.8 million
Discretionary investment manager: Board of Investments

STATE OF NEBRASKA INVESTMENT COUNCIL

941 "O" Street, Suite 107
Lincoln, NE 68508
Contact: Donald J. Mathes, State Investment Officer

Information current as of 12/31/86

Total assets: $672 million
Common and preferred stock: $256 million
U.S. government securities and agencies: $126 million
Corporate bonds: $80 million
Mortgages: $58 million—government backed
Cash and short-term securities: $48 million
Other investments: Insurance company contract, $104 million
Percent of fund internally managed: 80%
Investment advisor: Wilshire Associates

NEBRASKA STATE AND COUNTY RETIREMENT PLANS

P.O. Box 94903
Lincoln, NE 68509
Contact: Jack E. Nellson, Director, (402) 471-2053

Information current as of 3/31/87

Total assets: $201.4 million
Common and preferred stock: $2.4 million
Other investments: Balanced funds - $1.2 million; Evergreen Contract - GIC - $168.9 million; GICs - $28.9 million; Fixed - $18 thousand
Discretionary investment manager: Kirkpatrick-Pettis, Smith, Polian, Inc.
Investment advisor: Wilshire Associates

PUBLIC EMPLOYEES RETIREMENT SYSTEM OF NEVADA

693 W. Nye Lane
Carson City, NV 89701
Contact: Laura Wallace, Investment Officer, (702) 885-4200

Information current as of 2/28/87

Total assets: $2.1 billion
Common and preferred stock: $864 million
U.S. government securities and agencies: $423 million
Corporate bonds: $44 million
Mortgages: $340 million—privately held, $189 million, government backed, $151 million
Other real estate: $114 million
Cash and short-term securities: $283 million
Other investments: Venture capital, $5.1 million; Options, $1.9 million
Percent of fund internally managed: 4%
Discretionary investment managers: Criterion; Loomis-Sayles; TCW; Invesco; FIIA; Alliance; Wells Fargo; DFA; Heitman; JMB Realty; Balch-Hardy; Bankers; Columbine; Putnam; J.P. Morgan
Investment advisors: Mercer-Meidinger-Hansen; Wilshire Associates; Pension Realty Advisors

NEW HAMPSHIRE RETIREMENT SYSTEM

169 Manchester St., Bldg. 3
Concord, NH 03301
Contact: Harry M. Descoteau, Executive Secretary, (603) 271-3351

Information current as of 6/30/86

Total assets: $920.1 million
Common and preferred stock: $478.1 million
U.S. government securities and agencies: $218.2 million
Corporate bonds: $73.8 million
Mortgages: $26 million
Other real estate: $28.9 million (market)
Cash and short-term securities: $60.1 million
Other investments: Commingled funds, $200 thousand; convertible debt, $3.1 million; convertible preferred stock, $1.4 million
Discretionary investment managers: Amoskeag National Bank & Trust; BankEast Trust Co.; F. M. Alger Management Co.; Hallman, Jordan Management Co.; Indian Head National Bank; State Street Research & Management Co.; The Boston Company Institutional Investors, Inc.; Invesco Capital Management Co.; Investment Advisers, Inc.; Provident Investment Counsel Inc.; Putnam Advisory Company, Inc.; Trustee & Investors Compny Inc.

STATE OF NEW JERSEY, DIVISION OF INVESTMENT

CN 290
349 W. State St.
Trenton, NJ 08625
Contact: Roland Machold, Director, (609) 292-5106

Information current as of 6/30/86; all figures at market value

Total assets: $20.8 billion
Common and preferred stock: $7.9 billion
U.S. government securities and agencies: $4.2 billion
Corporate bonds: $2.4 billion
Mortgages: $1.8 billion—government backed, $1.7 billion
Cash and short-term securities: $4.5 billion
Percent of fund internally managed: 100%

NEW MEXICO PUBLIC EMPLOYEES' RETIREMENT ASSOCIATION

P.O. Box 2123
Santa Fe, NM 87504-2123
Contact: Judith K. Alderson, Director, (505) 827-4700

Information current as of 12/31/86

Total assets: $1.2 billion
Common and preferred stock: $373.2 billion
U.S. government securities and agencies: $317.8 billion
Corporate bonds: $236.2 million
Mortgages: $104.8 million—privately held, $4.4 million; government backed, $100.4 million
Other real estate: $15 million at market value
Cash and short-term securities: $145 million
Percent of fund internally managed: 1.5%
Discretionary investment managers: Invesco Capital Management Co.; Criterion Investment Management Co.; Fiduciary Trust Co. of NY; Wentworth, Hauser & Violich; Loomis, Sayles & Co.

NEW YORK STATE EMPLOYEES' RETIREMENT SYSTEM
NEW YORK STATE POLICEMEN'S AND FIREMEN'S RETIREMENT SYSTEM

Alfred E. Smith State Office Building
Albany, NY 12236
Contact: William M. Barrett, Director of Equity & Fixed Income Investments, (518) 473-6396

Information current as of 12/31/86

Total assets: $27.5 billion
Common and preferred stock: $11 billion
U.S. government securities and agencies: $6.7 billion
Corporate bonds: $3 billion
Mortgages: $2.8 billion—privately held, $1.2 billion; government backed, $1.6 billion
Other real estate: $60.8 million - equity real estate
Cash and short-term securities: $922 million
Other investments: Venture capital - $55.8 million; Leveraged buyouts - $104 million
Percent of fund internally managed: 86%
Discretionary investment managers: Equity Managers - Alliance Capital Management Corp.; Capital Guardian Trust Co.; Delaware Investment Advisers; Equitable Investment Management Corp.; Lazard Freres; Lord, Abbett; Miller, Anderson & Sherrerd; Oppenheimer Capital Corp., J. & W. Seligman & Company, Inc.; Shearson Asset Management; Wells Fargo Investment Advisors. Equity Real Estate - Eastdil Corp. Partners; Goldman Sachs Institutional Properties; Corporate Property Investors; Retail Property Trust (J. W. O'Connor); LaSalle Fund III; JMB Group Trust IV; Separate Account R (CIGNA); Midamerica/East V (RREEF). Leverage Buyouts - Kohlberg, Kravis, Roberts; Forstmann Little. Venture Capital - New York State Business Venture Partnership; APA Excelsior; Montgomery Bridge II; Peregrine Ventures II; U.S. Venture Partners II; Bridge Capital Investors II; Crossroads Capital.
Investment advisors: Fixed income - U.S. Trust Co.; Real estate - Pension Realty Advisors

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM

10 Corporate Woods Drive
Albany, NY 12211-2395

Information current as of 3/31/87

Total assets: $18 billion
Common and preferred stock: $7.2 billion
U.S. government securities and agencies: $3.7 billion
Corporate bonds: $3.4 billion
Mortgages: $1.7 billion—privately held, $628 million; government backed, $1 million
Other real estate: $305 million
Cash and short-term securities: $469 million
Other assets: $1.2 billion
Percent of fund internally managed: 87%
Discretionary investment managers: Beutel, Goodman Capital Management Ltd.; General American Advisors, Inc.; Glickenhaus and Company; Lehman Management Company, Inc.; Manufacturers Hanover Investment Corporation; Oppenheimer Capital Corporation; Sanford C. Bernstein and Company, Inc.

NORTH CAROLINA RETIREMENT SYSTEMS

325 N. Salisbury St.
Raleigh, NC 27611
Contact: C. Douglas Chappell, Director, (919) 733-3211

Information current as of 6/30/86

Total assets: $10.2 billion
Common and preferred stock: $2.1 billion
U.S. government securities and agencies: $2.2 billion
Corporate bonds: $4.5 billion
Mortgages $783 million
Other real estate: $125 million (real estate managers)
Cash and short-term securities: $128 million

Percent of fund internally mananged: 99%
Discretionary investment managers: Real estate managers—Aetna Life Insurance Co.; CIGNA Capital Advisors; Goldman Sachs; Security Capital
Investment advisors—Equity: Alliance Capital; Thorndike, Doran, Paine & Lewis; NCNB; Wachovia; First Citizens; First Union

NORTH DAKOTA PUBLIC EMPLOYEES RETIREMENT SYSTEM

P.O. Box 1214
Bismarck, ND 58502
Contact: Leroy Gilbertson, Deputy Director/Investment Officer, (701) 224-4500

Information current as of 3/22/86; all figures at market value

Total assets: $284 million
Common and preferred stock: 55%
U.S. government securities and agencies, corporate bonds and mortgages: 45%
Cash and short-term securities: 2%
Other investments: International 8%
Discretionary investment managers: Lehman Management; Criterion; Western Asset; Fred Alger; Sanford Bernstein; Investment Advisers; John McStay; State Street
Investment advisor: Callan Associates

NORTH DAKOTA TEACHERS' FUND FOR RETIREMENT

Box 7100
Bismarck, ND 58502
Contact: Scott Engmann, Executive Director, (701) 224-4500

Information current as of 3/31/87; all figures at market value except where noted

Total assets: $315 million
Common and preferred stock: Common $67.3 million; Preferred $175 thousand
U.S. government securities and agencies: $177.2 million (cost)
Corporate bonds: $29.5 million (cost)
Mortgages: $4 million (cost)
Cash and short-term securities: $33.4 million (cost)
Discretionary investment managers: Wilshire Asset Management (S&P 500); Delaware, Invesco (equity); Bear Stearns, Criterion, Sanford Bernstein, Bank of North Dakota (fixed)
Investment advisor: Callan Assoc. Inc.

OHIO SCHOOL EMPLOYEES' RETIREMENT SYSTEM

45 North Fourth St.
Columbus, OH 43215
Contact: Paul M. Kubinsky, Director of Investments, (614) 221-7012

Information current as of 12/31/86; all figures at cost

Total assets: $1.9 billion
Common and preferred stock: $597.9 million
U.S. government securities and agencies: $199.1 million
Corporate bonds: $280.8 million
Mortgages: $364.2 million—government backed
Other real estate: $317.3 million
Cash and short-term securities: $148.5 million
Other investments: Venture capital, $14.8 million
Percent of fund internally managed: 75%
Investment advisor: Mellon Capital Management Corp.

HIGHWAY PATROL RETIREMENT SYSTEM OF OHIO

4795 Evanswood Dr.
Columbus, OH 43213
Contact: Dean Huffman, Executive Director, (614) 466-2268

Information current as of 2/28/87

Total assets: $130.8 million
Common and preferred stock: $36.1 million
U.S. government securities and agencies: $44.3 million
Corporate bonds: $29 million
Mortgages: $19.4 million—GNMAs
Cash and short-term securities: $2 million
Percent of fund internally managed: 100%
Investment advisor: Duff & Phelps

OREGON PUBLIC EMPLOYEES' RETIREMENT SYSTEM

P.O. Box 73
Portland, OR 97207-0073
Contact: James C. George, Investment Manager, (503) 378-4111

Information current as of 12/31/86; all figures at market value except where noted

Total assets: $7.3 billion
Common and preferred stock: $3.1 billion
U.S. government securities and agencies: $852 million (cost)
Corporate bonds: $1.2 billion
Mortgages: $355 million
Other real estate: $225 million
Cash and short-term securities: $225 million
Other investments: Commercial paper, $21.8 million (cost); Canadian government bonds, $69.8 million (cost); international fund, $493.8 million; Alex. Brown Realty, $41.3 million; Koger Co., $2.4 million; Fred Meyer Ltd. Pr., $91.4 million; KKR LBO Funds, $180.8 million; RLAC LBO Funds, $11.4 million; venture capital, $59.4 million; variable annuity fund, $330.7 million
Percent of fund internally managed: 32%
Discretionary investment managers: International—ABD International; Cursitor-Eaton; Globe Finlay; Nomura Capital; Rowe-Price Fleming; Wertheim-Philippe. Domestic—Atalanta-Sosnoff; Batterymarch; BEA Associates; Columbia Management; Cutler & Co., Froley, Revy; General American; Geo. Springman; Harris Associates, Hotchkiss & Wiley; Olympic Capital; Pinnacle Associates; Quest Advisory; Rosenberg; Sarofim; Thompson/Rubenstein; Witter.
Investment advisors: Wilshire Associates, Frank Russell Trust Company, Alex. Brown Realty Advisors.

PENNSYLVANIA STATE EMPLOYEES' RETIREMENT SYSTEM

909 Green St.
Harrisburg, PA 17102-2999
Contact: David D. Burnett, Investment Analyst, (717) 787-9008

Information current as of 1/31/87; all figures at market value

Total assets: $7.4 billion
Common and preferred stock: $3.4 billion
Bonds: $2.3 billion
Mortgages and mortgage-backed securities: $699 million
Other real estate: $390 million
Cash and short-term securities: $574.5 million
Other investments: Venture Capital $35.4 million
Percent of fund internally managed: 8% (cash and short-term managed by the state treasurer)
Discretionary investment managers: Fred Alger; Alliance Capital Management Co.; Barrow Hanley; First Pennsylvania Bank; Geewax, Terker & Co.; Glickenhaus and Co.; McGinn; Mellon; Pilgrim, Baxter, Greig and Associates; Trinity; Wells Fargo; Delaware Investment Advisers; W. R. Huff; Miller, Anderson & Sherrerd; Payden & Rygel; Fidelity; Aetna; Corporate Property Investors; F.I.A. Associates, Inc.; John Hancock; JMB; Prudential; Security Capital; Butcher & Singer; Fostin Capital Associates; Genesis Seed Fund, Ltd.; NEPA Venture Fund, L.P.; Pittsburgh Seed Fund; PNC Venture Group; TDH II Limited.
Investment advisors: Wilshire Associates and Ronald A. Karp Associates

SOUTH CAROLINA RETIREMENT SYSTEM

P.O. Box 11778
Columbia, SC 29211
Contact: Mrs. Shakun Tahiliani, Investment Director, (803) 734-2101

Information current as of 12/31/86; all figures at market value

Total assets: $4.9 billion
Common and preferred stock: None
U.S. government securities and agencies: $2.7 billion
Corporate bonds: $1.1 billion
Mortgages: $711.6 million—privately held, $143.2 million; government backed, $568.4 million
Other real estate: None
Cash and short-term securities: $328.9 million
Other investments: Municipals, $1.6 million
Percent of fund internally managed: 100%
Investment advisor: Jamison Eaton & Wood

SOUTH DAKOTA RETIREMENT SYSTEM

216 East Capital
Pierre, SD 57501
Contact: Jeff Miller, Investment Analyst, (605) 773-3731

Information current as of 6/30/86

Total assets: $771 million
Common and preferred stock: $242 million
U.S. government securities and agencies: $132 million
Corporate bonds $91 million
Mortgages: $127 million—government backed
Other real estate: $24 million
Cash and short-term securities: $113 million
Other investments: International, $6 million; equity mutual funds, $6 million; arbitrage/liquidation, $30 million
Percent of fund internally managed: 85%
Discretionary investment managers: Frank Russell; Dreman Embry; Trinity; Bear Stearns; Wachovia; Security Capital; Smith Vasilion

TENNESSEE CONSOLIDATED RETIREMENT SYSTEM

P.O. Box 2867
Nashville, TN 37219
(615) 741-2643

Information current as of 3/31/87; all figures at book value

Total assets: $5.3 billion
Common and preferred stock: $1.5 billion
U.S. government securities and agencies: $904.2 million
Corporate bonds: $1.1 million
Mortgages: $533.7 million—privately held, $2.9 million; government backed, $530.8 million

Cash and short-term securities: $951.5 million
Other investments: International bonds $127.3 million; international stocks, $101.2 million
Percent of fund internally managed: 100%

EMPLOYEES RETIREMENT SYSTEM OF TEXAS

P.O. Box 13207
Austin, TX 78711
Contact: Nancy G. Goerdel, Deputy Director of Investments, (512) 476-6431

Information current as of 2/28/87; all figures at market value

Total assets: $4.7 billion
Common and preferred stock: $958 million
U.S. government securities and agencies: $2.3 billion
Corporate bonds: $858 million
Mortgages: $479 million—government backed, $479 million (pass-throughs)
Cash and short-term securities: $159 million
Percent of fund internally managed: 100%
Investment advisors: Invesco Capital Management (equities); Duff & Phelps Investment Management (fixed income)

TEACHER RETIREMENT SYSTEM OF TEXAS

1001 Trinity St.
Austin, TX 78701
Contact: Joe W. Perrone, Chief Investment Officer, (512) 397-6460

Information current as of 2/28/87; all figures at cost

Total assets: $14.1 billion
Common and preferred stock: $4.1 billion
U.S. government securities and agencies: $3.2 billion
Corporate bonds: $3.3 billion
Mortgages: $1.7 billion—privately held, $223 million; government backed: $1.5 billion
Other real estate: $1.4 billion
Cash and short-term securities: $365 million
Percent of fund internally managed: 100%
Investment counsel: Thorndike Doran Paine & Lewis

VIRGINIA SUPPLEMENTAL RETIREMENT SYSTEM

P.O. Box 6-C
Richmond, VA 23214
Contact: Timothy R. Barron, Director of Investments, (804) 344-3157

Information current as of 4/1/87; all figures at market value

Total assets: $7.2 billion
Common and preferred stock: $4.1 billion
U.S. government securities and agencies: $1.2 billion
Corporate bonds: $538.6 million
Mortgages: $194.2 million—government backed
Other real estate: $253.7 million
Cash and short-term securities: $923.7 million
Other investments: $11.2 million investment in state office buildings
Percent of fund internally managed: 15%
Discretionary investment managers: Ardsley Partners; Brignoli, Curley & Roberts; Concord Capital Management; Corinthian Capital Company; DCM Advisers; Delaware Investment Advisors; Fidelity Management Trust Company; GAMCO Investors, Inc.; Hellman, Jordan Management Company, Inc.; IDS Advisory Group; Jundt/Capen Associates; Lincoln Capital Management; Loomis, Sayles & Co., Inc.; McKenzie, Walker Investment Management; Mellon Capital Management Corporation; Nicholas-Applegate Capital Management; Pacific Financial Research; Rosenberg Institutional Equity Management; Schafer Capital Management Company; Donald Smith & Co., Inc., Wells Fargo Investment Advisors; Sanford C. Bernstein & Co., Inc.; Lehman Management Co., Inc.; MacKay-Shields Financial Corporation; Massachusetts Financial Services Company; Merganser Capital Management Corporation; Security Capital Management, Inc.; Sovran Capital Management Corporation; Equitable Life Assurance Society of the U.S.; LaSalle Advisors; J. P. Morgan Investment Management; New England Mutual Life; Phoenix Mutual Life; Prudential Insurance Corporation of America; The RREEF Corporation; Internal management

WEST VIRGINIA PUBLIC EMPLOYEES RETIREMENT SYSTEM

Capitol Complex, Bldg. 5, Room 1052
Charleston, WV 25305
Contact: Kathy Lester, Director of Investments, State Treasurer's Office, Room E-120, State Capitol Bldg., Charleston, WV 25305, (304) 346-9100

Information current as of 3/31/87

Total assets: $941.2 million
Common and preferred stock: None
U.S government securities and agencies: $673.2 million
Corporate bonds: $137 million
Mortgages: $62 million—privately held, $24.8 million; government backed, $37.2 million
Cash and short-term securities: $69 million
Percent of fund internally managed: 20%
Investment advisor: Investment Advisers, Inc.

WEST VIRGINIA TEACHERS' RETIREMENT SYSTEM

Capitol Complex, Bldg. 5
Charleston, WV 25305
Contact: Kathy Lester, Director of Investments, State Treasurer's Office, Room E-120, State Capitol Bldg., Charleston, WV 25305, (304) 346-9100

Information current as of 3/31/87

Total assets: $285.7 million
Common and preferred stock: None
U.S. government securities and agencies: $235 million
Corporate bonds: $16 million
Mortgages: $50 million—government backed
Cash and short-term securities: $9 million
Percent of fund internally managed: 20%
Investment advisor: Duff & Phelps

STATE OF WISCONSIN INVESTMENT BOARD

121 E. Wilson St.
P.O. Box 7842
Madison, WI 53707
Contact: Patricia Lipton, Executive Assistant, (608) 266-9451

Information current as of 2/28/87

Total assets: $15.2 billion (market)
Common and preferred stock: $6.1 billion
Public bonds: $3.6 billion
Mortgages: $138 million
Other real estate: Equity: $222 million
Cash and short-term securities: $2.4 billion
Other investments: Private placements, $2.6 billion; LBOs, $100 million; Venture capital, $26 million
Percent of fund internally managed: 100%

Cases & Rulings

Continued from page 34

provisions of ERISA itself.

We can expect that, in the near future, federal district courts will apply the principles of *Fort Halifax* and *Pilot* to other cases. The application of the *Fort Halifax* "administrative scheme" test will be of particular interest in determining whether an employee benefit plan exists. We will continue to follow these and other important preemption issues in future articles. ☐

FOOTNOTES

1. *See, e.g.*, the statement of Rep. Dent, "With the preemption of the field, we round out the protection afforded participants by eliminating the threat of conflicting and inconsistent State and local regulation." 120 Cong. Rec. 29,197 (1974), *as cited in Shaw v. Delta Air Lines, Inc.*, 463 U.S. 85, 99 (1983).

2. A procedural preemption case, *Metropolitan Life Ins. Co. v. Taylor,* 55 U.S.L.W. 4468 (April 7, 1987), was decided the same day as *Pilot*. In *Taylor,* the Court found that any civil complaint raising an ERISA claim is federal in character and that it can be removed from state to federal court, even though the federal cause of action may not have been pleaded on the face of the complaint.

3. 55 U.S.L.W. at 4700 n. 1.

4. In support of its NLRA preemption argument, Fort Halifax contended that the Maine Law was an "additional restriction on economic weapons of self-help" prohibited by *Golden State Transit Corp. v. City of Los Angeles,* 475 U.S. 608 (1986). The Court observed that the statute establishes only a minimum substantive labor standard and that the parties are expressly allowed to negotiate for a different severance benefit. Therefore, there was no conflict with the mandate of the NLRA. *Id.* at 4706-07.

5. *Id.* at 4701.

6. *Id.*

7. *Id.*

8. 765 F.2d 320 (2d Cir. 1985), *summarily aff'd.*, 106 S. Ct. 3267 (1986).

9. 55 U.S.L.W. at 4704 n. 10.

10. 29 U.S.C. Sec. 1144(b)(2)(A). State laws regulating banking and securities also are saved from preemption by this provision.

11. 770 F.2d 1311 (1985).

12. *Metropolitan Life Insurance Co. v. Massachusetts,* 471 U.S. 724 (1985); *Shaw v. Delta Airlines,* 463 U.S. 85 (1983).

13. 15 U.S.C. Secs. 1011-15.

14. Sec. 502 of ERISA, 29 U.S.C. Sec. 1132.

Current Issues In Plan Design

States grapple with health care cost crunch

States have made great strides in meeting the objective of containing the costs of their employee health benefit plans. A wide variety of cost management techniques are utilized by state employee health benefit plans and these cost management efforts have been a key factor responsible for holding down plan costs.

Martin E. Segal Company's 1987 update of its survey of state employee health benefit plans indicates that, for the second year in a row, the increase in the average cost of state plans was substantially less than the rise in national medical care costs as measured by the Consumer Price Index (CPI). Many state plans have realized significant savings by instituting cost management programs and incentives for more cost-effective health care.

In early 1987 the Segal Company's survey was updated to provide current information on plan participants and monthly contributions to the 50 state employee health benefit plans. The four 1987 update tables show plan participants and HMO participation as of January 1987 (Table 1), and contributions to each of the 50 state plans for January 1986 and January 1987 (Tables 2 through 4). In addition, Tables 2 through 4 show the percentage of the total cost paid by each state in 1987 and 1986 for employee only coverage, employee and family coverage, and retiree only coverage.

Tables 2 through 4 present contribution data for basic plans and do not include the numerous HMOs offered to state employees. For states with multiple benefit plans, the tables generally show contributions for only the "low" and "high" basic plans. Figures regarding average costs for the 50 state plans and the distribution of plans by the percentage of the total cost paid by the state are based on the low plan, where applicable.

Although averages conceal the very wide diversity in state employee health plan benefits and costs, the average total cost for employee only coverage increased approximately 5.3 percent between January 1986 and January 1987; this increase was about seven-tenths of the 7.5 percent rise in the medical component of the CPI during the same twelve months. For employee and family coverage, the average total cost for the 50 state plans increased 4.8 percent, or by less than two-thirds of the 7.5 percent increase in national medical care costs during the year ended January 1987. The average cost of providing health care benefits for a single retiree increased 4.6 percent, or by a slightly smaller percentage than the cost of family coverage.

Plan Participants (Table 1)

As of January 1987, the 50 state health benefit plans covered more than 3½ million active employees and retirees. The totals of the figures shown in Table 1 are 2,834,000 covered employees and 670,200 covered retirees. For three states—California, New Jersey, and New York—the figures shown in Table 1 are for state employees and retirees only, and exclude the thousands of local government employees covered by these three state-administered plans. Therefore, the total number of employees and retirees covered by the 50 state plans probably exceeds four million.

by JOHN P. MACKIN
Senior Vice President
Martin E. Segal Company
New York, N.Y.

HMO participation varies widely among the 50 states, as shown in Table 1. The number of HMOs offered ranges from zero in eight states to more than 10 in 14 states. States that offer 25 or more HMOs include California, Florida, New York, Ohio, and Wisconsin.

Approximately 828,000 or almost 30 percent of the 2.8 million employees covered by the 50 state plans are enrolled in HMOs. The percentage of employees enrolled in HMOs varies dramatically, from less than 10 percent in 15 states to more than 50 percent in five states: Arizona (57 percent), California (61 percent), Colorado (58 percent), Illinois (64 percent), and Wisconsin (74 percent).

Employee Only (Table 2)

Almost two-thirds of the states currently pay 100 percent of the cost for employee only coverage under at least one basic plan. Between 1986 and 1987 the distribution of plans by the state's share of the total cost for employee only coverage changed as follows:

State's Share of Total Cost	Number of State Plans 1986	1987
100%	30	32
90% - 99%	8	6
80% - 89%	8	8
70% - 79%	2	2
Less than 70%	2	2

Table 1 Participants in State Employee Health Benefit Plans as of January 1987

State	Employees Covered by Plan [a]	Retirees Covered by Plan [b]	HMO Participation: Number of HMOs Offered	HMO Participation: Employees Enrolled in HMOs: Number	HMO Participation: Employees Enrolled in HMOs: Percent
Alabama	33,000	5,900	2	700	2%
Alaska	13,000	7,600	0	0	0
Arizona	37,400	3,200	4	21,200	57
Arkansas	19,000	3,000	0	0	0
California [c]	164,600	64,900	29	100,200	61
Colorado	22,400	[d]	17	13,000	58
Connecticut	45,000	7,000	6	6,000	13
Delaware	25,000	5,000	2	5,200	21
Florida	103,500	10,300	61	38,000	37
Georgia	149,000	28,600	5	17,400	12
Hawaii	34,700	18,800	3	9,600	28
Idaho	12,500	2,000	0	0	0
Illinois	119,500	41,000	22	76,900	64
Indiana	31,200	0 over 65	5	14,000	45
Iowa	26,300	2,100	6	2,000	8
Kansas	35,700	6,200	8	11,700	33
Kentucky	109,000	4,500	14	40,500	37
Louisiana	64,000	25,500	7	18,000	28
Maine	14,000	6,000	0	0	0
Maryland	51,000	15,000	14	16,000	31
Massachusetts	90,900	38,100	19	44,000	48
Michigan	56,000	20,700	20	23,900	43
Minnesota	50,000	7,500	9	18,900	38
Mississippi	43,000	4,000	0	0	0
Missouri	30,000	5,100	7	4,400	15
Montana	10,000	1,600	0	0	0
Nebraska	12,000	0	4	2,000	17
Nevada	13,500	1,800	2	4,300	32
New Hampshire	9,000	1,100	4	600	7
New Jersery [c]	88,400	14,300	16	28,500	32
New Mexico	18,000	2,200	3	4,000	22
New York [c]	239,000	76,000	25	59,000	25
North Carolina	200,700	57,500	3	41,000	20
North Dakota	12,000	2,000	3	500	4
Ohio	50,500	[d]	34	24,100	48
Oklahoma	37,500	6,500	3	10,000	27
Oregon	22,500	4,200	7	6,300	28
— BUBB Plan	16,500	3,000	5	8,000	48
Pennsylvania	85,000	44,000	20	10,400	12
Rhode Island	17,000	7,500	3	7,400	44
South Carolina	125,200	26,100	4	29,800	24
South Dakota	11,100	400	0	0	0
Tennessee	57,100	2,200	2	4,300	8
Texas	109,000	20,000	14	31,000	28
Utah	12,500	3,500	2	2,500	20
Vermont	6,000	1,800	1	30	1
Virginia	84,500	16,700	7	9,500	11
Washington	70,000	15,000	7	23,000	33
West Virginia	84,000	16,000	2	1,000	1
Wisconsin	53,000	13,000	30	39,200	74
Wyoming	10,300	1,800	0	0	0

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[a] Approximate total number of covered employees, including employees enrolled in HMOs.

[b] Approximate total number of covered retirees.

[c] Participants shown are State employees and retirees only (i.e., figures exclude local employees and retirees).

[d] Retired State employees are covered by a separate health benefit plan for all retired members of the statewide public employees retirement system.

During the year ended January 1987, the total cost for employee only coverage increased in 23 states, remained the same in 21 states, and decreased in six states. This is generally similar to last year's experience, when the comparable figures were 24, 17 and 10, respectively.

The average total cost for employee only coverage increased to $82.09 for January 1987 from $77.95 for January 1986. While the percentage changes in an individual plan's costs varied substantially, the 5.3 percent increase in the average total cost for employee only coverage was about seven-tenths of the 7.5 percent rise in national medical care costs as measured by the CPI.

Employee and Family (Table 3)

Fewer than one-fourth of the states pay for the full cost of health benefits for employees and their dependents. The distribution of state plans by the state's share of the total cost for employee and family coverage changed only slightly between 1986 and 1987.

State's Share of Total Cost	Number of State Plans: 1986	Number of State Plans: 1987
100%	12	12
90% - 99%	4	4
80% - 89%	7	7
70% - 79%	6	6
60% - 69%	5	6
50% - 59%	7	6
Less than 50%	9	9

As of January 1987, 21 states were paying less than 70 percent of the total cost for employee and family coverage under the low option plan. In nine of these 21 states, the state's share was less than half the total cost for family coverage.

Among the 38 state plans where employees contribute for employee and family coverage, the average employee cost was $66.09 for January 1987. In six of these 38 states, the employee's out-of-pocket cost for family coverage exceeds $100 a month.

For the 50 state plans the average total cost for family coverage increased 4.8 percent—to $188.62 for January 1987 from $179.97 for January 1986. The percentage increase in the average total cost for family coverage was less than two-thirds of the 7.5 percent increase in the medical component of the CPI.

Tables follow
Text continued on page 60

Table 2

Monthly Contributions to State Employee Health Benefit Plans
January 1986 and January 1987
Employee Only Coverage

State	Cost to Employee		Cost to State		Total Cost		Percent of Total Cost Paid by State	
	1986	1987	1986	1987	1986	1987	1986	1987
Alabama	0	0	105.00	125.00	105.00	125.00	100.0%	100.0%
Alaska	0	0	222.60	222.60	222.60	222.60	100.0	100.0
	0	0	237.75	237.75	237.75	237.75	100.0	100.0
Arizona	1.00	1.00	79.46	86.78	80.46	87.78	98.8	98.9
Arkansas	8.36	9.26	62.50	70.00	70.86	79.26	88.2	88.3
	25.40	28.20	62.50	70.00	87.90	98.20	71.1	71.3
California	0	0	71.61	77.22	71.61	77.22	100.0	100.0
	39.39	54.78	85.00	88.00	124.39	142.78	68.3	61.6
Colorado	8.12	10.00	57.00	55.12	65.12	65.12	87.5	84.6
Connecticut	0	0	89.30	100.80	89.30	100.80	100.0	100.0
Delaware	0	0	72.48	77.08	72.48	77.08	100.0	100.0
	19.06	20.30	72.48	77.08	91.54	97.38	79.2	79.2
Florida	15.18	15.18	65.20	65.20	80.38	80.38	81.1	81.1
Georgia	13.60	13.60	62.65	68.55	76.25	82.15	82.2	83.4
	26.65	23.40	62.65	68.55	89.30	91.95	70.2	74.6
Hawaii	18.22	18.22	27.34	27.34	45.56	45.56	60.0	60.0
Idaho	0	0	69.52	69.52	69.52	69.52	100.0	100.0
Illinois	0	0	75.24	73.32	75.24	73.32	100.0	100.0
Indiana	1.58	1.58	72.45	72.45	74.03	74.03	97.9	97.9
Iowa	0	0	68.24	75.06	68.24	75.06	100.0	100.0
Kansas	0	0	78.53	92.55	78.53	92.55	100.0	100.0
Kentucky	0	0	60.22	69.79	60.22	69.79	100.0	100.0
Louisiana	39.52	39.52	39.52	39.52	79.04	79.04	50.0	50.0
Maine	0	0	72.56	72.92	72.56	72.92	100.0	100.0
Maryland	10.22	11.51	57.92	65.25	68.14	76.76	85.0	85.0
	19.54	22.37	57.92	65.25	77.46	87.62	74.8	74.5
Massachusetts	10.22	11.65	91.95	104.84	102.17	116.49	90.0	90.0
Michigan	11.12	11.12	100.14	100.14	111.26	111.26	90.0	90.0
Minnesota	0	0	73.00	69.70	73.00	69.70	100.0	100.0
Mississippi	0	0	72.00	72.00	72.00	72.00	100.0	100.0
Missouri	0	0	69.00	69.00	69.00	69.00	100.0	100.0
Montana	0	0	96.20	97.60	96.20	97.60	100.0	100.0

Table 2 Employee Only Coverage (Cont'd.)

State	Cost to Employee		Cost to State		Total Cost		Percent of Total Cost Paid by State	
	1986	1987	1986	1987	1986	1987	1986	1987
Nebraska	0	0	41.25	41.25	41.25	41.25	100.0%	100.0%
	11.26	11.26	44.47	44.47	55.73	55.73	79.8	79.8
Nevada	0	0	129.20	129.20	129.20	129.20	100.0	100.0
New Hampshire	0	0	67.96	78.01	67.96	78.01	100.0	100.0
New Jersery	0	0	58.93	65.89	58.93	65.89	100.0	100.0
New Mexico	15.30	16.55	45.88	49.63	61.18	66.18	75.0	75.0
	24.48	26.48	36.70	39.70	61.18	66.18	60.0	60.0
New York	7.51	8.64	67.66	77.86	75.17	86.51	90.0	90.0
	9.07	10.06	83.15	91.99	92.22	100.63	90.0	91.4
North Carolina	0.26	0	63.82	63.82	64.08	63.82	99.6	100.0
North Dakota	0	0	60.00	60.00	60.00	60.00	100.0	100.0
Ohio	25.50	25.50	68.95	68.95	94.45	94.45	73.0	73.0
Oklahoma	0	0	115.31	115.31	115.31	115.31	100.0	100.0
Oregon	0	0	72.46	90.68	72.46	90.68	100.0	100.0
— BUBB Plan	0	0	144.90	153.59	144.90	153.59	100.0	100.0
Pennsylvania	0	0	57.81	56.15	57.81	56.15	100.0	100.0
	0	0	70.50	70.03	70.50	70.03	100.0	100.0
Rhode Island	0	0	77.97	96.71	77.97	96.71	100.0	100.0
South Carolina	0	0	62.29	67.27	62.29	67.27	100.0	100.0
	7.02	7.58	62.29	67.27	69.31	74.85	89.9	89.9
South Dakota	0	0	53.42	53.42	53.42	53.42	100.0	100.0
Tennessee	11.70	11.70	46.82	46.82	58.52	58.52	80.0	80.0
Texas	0	0	66.29	66.29	66.29	66.29	100.0	100.0
Utah	8.25	8.25	74.25	74.25	82.50	82.50	90.0	90.0
Vermont	8.65	10.85	34.58	43.40	43.23	54.25	80.0	80.0
Virgina	0	0	71.16	78.36	71.16	78.36	100.0	100.0
Washington	0	0	64.52	64.52	64.52	64.52	100.0	100.0
West Virginia	0	0	79.95	79.95	79.95	79.95	100.0	100.0
Wisconsin [a]	12.31	16.29	72.69	77.02	85.00	93.31	85.5	82.5
Wyoming	5.94	0	100.00	100.00	105.94	100.00	94.4	100.0

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[a] Contributions vary by benefit plan and by county. State pays lesser of 90% of standard plan rate or 105% of lowest cost HMO in employee's county. Rates shown in table are for standard plan in Dane County (Madison).

Where two sets of figures are listed for a state, they represent the "low" and "high" basic plans.

Table 3

Monthly Contributions to State Employee Health Benefit Plans
January 1986 and January 1987
Employee and Family Coverage

	Cost to Employee		Cost to State		Total Cost		Percent of Total Cost Paid by State	
State	1986	1987	1986	1987	1986	1987	1986	1987
Alabama	82.50	90.00	105.00	125.00	187.50	215.00	56.0%	58.1%
Alaska	0	0	222.60	222.60	222.60	222.60	100.0	100.0
	0	0	237.75	237.75	237.75	237.75	100.0	100.0
Arizona	59.78	65.30	150.98	164.64	210.76	229.94	71.6	71.6
Arkansas	50.58	33.20	62.50	70.00	113.08	103.20	55.3	67.8
	77.54	89.20	62.50	70.00	140.04	159.20	44.6	44.0
California	0	0	193.57	198.26	193.57	198.26	100.0	100.0
	97.34	139.29	211.00	219.00	308.34	358.29	68.4	61.1
Colorado	117.12	119.00	57.00	55.12	174.12	174.12	32.7	31.7
Connecticut	44.56	50.46	193.34	217.96	237.90	268.42	81.3	81.2
Delaware	0	0	178.26	189.60	178.26	189.60	100.0	100.0
	45.90	48.78	178.26	189.60	224.16	238.80	79.5	79.5
Florida	55.64	55.64	122.80	122.80	178.44	178.44	68.8	68.8
Georgia	39.80	39.80	109.50	122.05	149.30	161.85	73.3	75.4
	66.00	59.46	109.50	122.05	175.50	181.51	62.4	67.2
Hawaii	56.03	56.03	84.05	84.05	140.08	140.08	60.0	60.0
Idaho	63.40	63.40	69.52	69.52	132.92	132.92	52.3	52.3
Illinois	67.18	67.18	96.32	82.98	163.50	150.16	58.9	55.3
	123.02	123.02	96.12	86.62	219.14	209.64	43.9	41.3
Indiana	36.66	36.66	178.01	178.01	214.67	214.67	82.9	82.9
Iowa	57.76	59.12	99.20	113.54	156.96	172.66	63.2	65.8
Kansas	127.39	158.12	78.53	92.55	205.92	250.67	38.1	36.9
Kentucky	83.94	97.00	60.22	69.79	144.16	166.79	41.8	41.8
Louisiana	90.96	90.96	90.96	90.96	181.92	181.92	50.0	50.0
Maine	52.46	52.82	129.46	130.30	181.92	183.12	71.2	71.2
Maryland	30.08	33.83	170.48	191.73	200.56	225.56	85.0	85.0
	53.78	61.27	170.48	191.73	224.26	253.00	76.0	75.8
Massachusetts	22.16	25.61	199.48	230.47	221.64	256.08	90.0	90.0
Michigan	31.16	31.16	280.52	280.52	311.68	311.68	90.0	90.0
Minnesota	9.34	8.92	157.18	150.08	166.52	159.00	94.4	94.4
Mississippi	89.70	89.70	72.00	72.00	161.70	161.70	44.5	44.5
Missouri	151.75	151.75	69.00	69.00	220.75	220.75	31.3	31.3
Montana	61.20	57.60	105.00	115.00	166.20	172.60	63.2	66.6

Table 3 Employee and Family Coverage (Cont'd.)

State	Cost to Employee 1986	Cost to Employee 1987	Cost to State 1986	Cost to State 1987	Total Cost 1986	Total Cost 1987	Percent of Total Cost Paid by State 1986	Percent of Total Cost Paid by State 1987
Nebraska	0	0	147.68	147.68	147.68	147.68	100.0%	100.0%
	39.95	39.95	159.23	159.23	199.18	199.18	79.9	79.9
Nevada	69.73	83.90	129.20	129.20	198.93	213.10	64.9	60.6
New Hampshire	0	0	183.50	210.62	183.50	210.62	100.0	100.0
New Jersery	0	0	143.83	160.56	143.83	160.56	100.0	100.0
New Mexico	39.57	42.40	118.69	127.19	158.26	169.59	75.0	75.0
	63.31	67.84	94.95	101.75	158.26	169.59	60.0	60.0
New York	29.19	33.70	132.77	153.12	161.96	186.86	82.0	82.0
	34.53	39.16	163.33	183.32	197.86	217.02	82.5	84.5
North Carolina	89.54	89.28	63.82	63.82	153.36	153.10	41.6	41.7
North Dakota	0	0	168.00	168.00	168.00	168.00	100.0	100.0
Ohio	61.13	61.13	165.27	165.27	226.40	226.40	73.0	73.0
Oklahoma	108.00	108.00	115.31	115.31	223.31	223.31	51.6	51.6
Oregon	0	0	130.41	141.74	130.41	141.74	100.0	100.0
— BUBB Plan	0	0	144.90	153.59	144.90	153.59	100.0	100.0
Pennsylvania	0	0	139.33	140.81	139.33	140.81	100.0	100.0
	0	0	189.81	187.92	189.81	187.92	100.0	100.0
Rhode Island	0	0	207.86	235.66	207.86	235.66	100.0	100.0
South Carolina	61.12	66.02	62.29	67.27	123.41	133.29	50.5	50.5
	72.10	77.88	62.29	67.27	134.39	145.15	46.4	46.3
South Dakota	130.74	123.62	53.42	53.42	184.16	177.04	29.0	30.2
Tennessee	29.22	29.22	116.89	116.89	146.11	146.11	80.0	80.0
Texas	88.36	88.36	87.00	87.00	175.36	175.36	49.6	49.6
Utah	21.82	21.82	196.39	196.39	218.21	218.21	90.0	90.0
Vermont	23.99	30.11	95.98	120.45	119.97	150.56	80.0	80.0
Virginia	52.52	57.00	128.60	139.54	181.12	196.54	71.0	71.0
Washington	0	0	183.56	183.56	183.56	183.56	100.0	100.0
West Virginia	0	0	187.95	187.95	187.95	187.95	100.0	100.0
Wisconsin [a]	26.00	28.74	181.89	199.35	207.89	228.09	87.5	87.4
Wyoming	111.42	115.00	100.00	100.00	211.42	215.00	47.3	46.5

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[a] Contributions vary by benefit plan and by county. State pays lesser of 90% of standard plan rate or 105% of lowest cost HMO in employee's county. Rates shown in table are for standard plan in Dane County (Madison).

Where two sets of figures are listed for a state, they represent the "low" and "high" basic plans.

Table 4

Monthly Contributions to State Employee Health Benefit Plans
January 1986 and January 1987
Retiree Only Coverage (Over 65 with Medicare)

State	Cost to Employee 1986	Cost to Employee 1987	Cost to State 1986	Cost to State 1987	Total Cost 1986	Total Cost 1987	Percent of Total Cost Paid by State 1986	Percent of Total Cost Paid by State 1987
Alabama	34.35	0	22.35	60.00	56.70	60.00	39.4%	100.0%
Alaska	0	0	175.00	165.00	175.00	165.00	100.0	100.0
Arizona	67.68	73.84	0	0	67.68	73.84	0	0
Arkansas	41.50	43.00	0	0	41.50	43.00	0	0
California	0	0	51.70	54.05	51.70	54.05	100.0	100.0
	10.53	18.31	85.00	88.00	95.53	106.31	89.0	82.8
Colorado [a]	0	0	35.52	35.52	35.52	35.52	100.0	100.0
	35.52	35.52	0	0	35.52	35.52	0	0
Connecticut	25.59	22.93	20.94	34.38	46.53	57.31	45.0	60.0
Delaware	3.20	3.40	31.18	33.16	34.38	36.56	90.7	90.7
	21.36	22.72	31.18	33.16	52.54	55.88	59.3	59.3
Florida	55.30	55.30	0	0	55.30	55.30	0	0
Georgia	13.60	13.60	62.65	68.55	76.25	82.15	82.2	83.4
	26.65	23.40	62.65	68.55	89.30	91.95	70.2	74.6
Hawaii	0	0	53.64	53.64	53.64	53.64	100.0	100.0
Idaho	35.54	58.00	5.68	0	41.22	58.00	13.8	0
Illinois	0	0	75.24	73.32	75.24	73.32	100.0	100.0
Indiana	—	—	—	—	—	—	—	—
Iowa	31.90	35.10	0	0	31.90	35.10	0	0
Kansas	36.59	43.16	0	0	36.59	43.16	0	0
Kentucky	51.75	54.15	0	0	51.75	54.15	0	0
Louisiana	20.62	20.62	20.62	20.62	41.24	41.24	50.0	50.0
Maine	0	0	37.12	36.00	37.12	36.00	100.0	100.0
Maryland	7.90	9.35	44.76	52.99	52.66	62.34	85.0	85.0
	21.12	25.07	44.76	52.99	65.88	78.06	67.9	67.9
Massachusetts	6.65	6.20	59.86	55.84	66.51	62.04	90.0	90.0
Michigan	0	0	75.57	75.57	75.57	75.57	100.0	100.0
Minnesota	51.28	51.28	0	0	51.28	51.28	0	0
Mississippi	34.50	34.50	0	0	34.50	34.50	0	0
Missouri	33.75	32.25	3.00	4.50	36.75	36.75	8.2	12.2
	60.00	58.50	3.00	4.50	63.00	63.00	4.8	7.1
Montana	61.00	61.00	0	0	61.00	61.00	0	0

Table 4

Retiree Only Coverage (Cont'd.)

State	Cost to Employee		Cost to State		Total Cost		Percent of Total Cost Paid by State	
	1986	1987	1986	1987	1986	1987	1986	1987
Nebraska	—	—	—	—	—	—	—	—
Nevada	56.89	56.89	34.81	34.81	91.70	91.70	38.0%	38.0%
New Hampshire	0	0	40.00	44.02	40.00	44.02	100.0	100.0
New Jersery [b]	43.71	45.00	0	0	43.71	45.00	0	0
New Mexico	46.50	52.69	0	0	46.50	52.69	0	0
New York [c] [d]	9.07	10.06	81.59	90.57	90.66	100.63	90.0	90.0
North Carolina	0	0	48.58	48.58	48.58	48.58	100.0	100.0
North Dakota	50.00	50.00	0	0	50.00	50.00	0	0
Ohio	0	0	50.00	53.29	50.00	53.29	100.0	100.0
Oklahoma	45.90	45.90	0	0	45.90	45.90	0	0
Oregon	36.03	40.21	0	0	36.03	40.21	0	0
— BUBB Plan	43.78	53.92	0	0	43.78	53.92	0	0
Pennsylvania	0	0	57.78	49.09	57.78	49.09	100.0	100.0
	0	0	68.93	60.24	68.93	60.24	100.0	100.0
Rhode Island	41.37	41.37	0	0	41.37	41.37	0	0
South Carolina	0	0	54.04	67.27	54.04	67.27	100.0	100.0
	0	7.58	54.04	67.27	54.04	74.85	100.0	89.9
South Dakota	51.92	51.38	0	0	51.92	51.38	0	0
Tennessee	33.96	31.89	0	0	33.96	31.89	0	0
Texas	0	0	66.29	66.29	66.29	66.29	100.0	100.0
Utah	54.50	60.00	0	0	54.50	60.00	0	0
Vermont	3.54	4.45	14.17	17.78	17.71	22.23	80.0	80.0
Virginia	37.16	39.96	0	0	37.16	39.96	0	0
Washington	38.86	38.86	0	0	38.86	38.86	0	0
West Virginia	23.97	23.97	0	0	23.97	23.97	0	0
Wisconsin [c] [e]	57.15	65.32	0	0	57.15	65.32	0	0
Wyoming	44.12	54.12	0	0	44.12	54.12	0	0

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[a] Portion of premium paid by Colorado Public Employees' Retirement Association varies from 0% for a retiree with less than six years' service to 100% for a retiree with 20 or more years' service.

[b] State pays total cost for employees who retire with 25 or more years of credited service or retire on a disabilty pension.

[c] Sick leave credits may be used by retirees to pay premiums.

[d] State pays total cost for employees who retired before 1983.

[e] Rates shown are for standard plan.

Where two sets of figures are listed for a state, they represent the "low" and "high" basic plans.

Current Issues

Text continued from page 53

Retiree Only (Table 4)

Table 4 shows 1987 and 1986 contributions for a single retiree age 65 or over with Medicare. Contribution data are presented for 48 instead of 50 plans, because Indiana and Nebraska do not offer retired employees the opportunity to continue to participate in the state health benefits plan.

Over half the states currently make no contributions toward the cost of retiree health care benefits. At the other end of the scale, 14 states pay for the full cost of coverage for a single retiree age 65 or over with Medicare.

The distribution of plans by the state's share of the total cost for retiree only coverage is summarized below:

State's Share of Total Cost	Number of State Plans	
	1986	1987
100%	13	14
90% - 99%	3	3
80% - 89%	3	3
40% - 60%	2	2
10% - 40%	4	2
0%	25*	26*

*Includes Indiana and Nebraska

Among the 48 state plans that make access to coverage available to retirees, the average cost of coverage for a single retiree 65 or over with Medicare was $54.68 for January 1987, or 4.6 percent higher than the $52.28 average for January 1986.

In many states, the growing number of politically-effective retired public employees will continue to lobby for legislation providing for payment by the state of a larger portion of the cost of their health care coverage. Over the next several years, we expect that some states will also establish programs to start funding retirees' health care benefits on a level cost basis during the employees' working years.

Cost management initiatives

State employee health benefit plans utilize a wide variety of cost management techniques, and these cost management initiatives have played a major role in holding down the rate of increase in average plan costs. Several states have recently implemented new cost-effective plan designs, with the dual objectives of providing more cost-effective care and making employees cost conscious health care consumers.

Precertification. Among state plans, the major new development in the area of health care cost management is the introduction of precertification programs. During the past two years, approximately two-fifths of the state plans have instituted some type of precertification or preadmission review program. In a growing number of state plans, the precertification program encompasses additional features such as hospital length of stay assignments, concurrent review and discharge planning.

PPOs. Preferred provider arrangements have been established by some 15 state employee health benefit plans. Many of these plans report that the PPO networks have produced significant savings in health care costs.

Second Opinions. Second surgical opinion programs are now common features of state plans. Many of these programs include incentive features like 100 percent reimbursement for second opinions, and several require second opinions for specified surgical procedures.

Outpatient Services. Incentives for outpatient surgery, and for diagnostic and preadmission tests performed on an outpatient basis, are included in more than a dozen state plans. The outpatient incentives adopted by state plans have contributed to the decrease in the use of much more costly hospital inpatient services.

Other Provisions. Other cost management provisions that have recently been introduced by state plans include: wellness benefits and incentives for healthier lifestyles; limitations on benefits for weekend admissions; audits of hospital and doctor bills; individual case management; home health care benefits; hospice benefits; and 100 percent reimbursement for generic drugs.

Many states have been successful in holding down the costs of their employee health benefit plans. The experience of state plans indicates that cost management initiatives can influence providers and make our health care system more cost effective. ☐

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Gregg Herring, Larry Geikre, 18601 LBJ Freeway/Suite 240, Mesquite, Tex. 75150, (214) 270-6651
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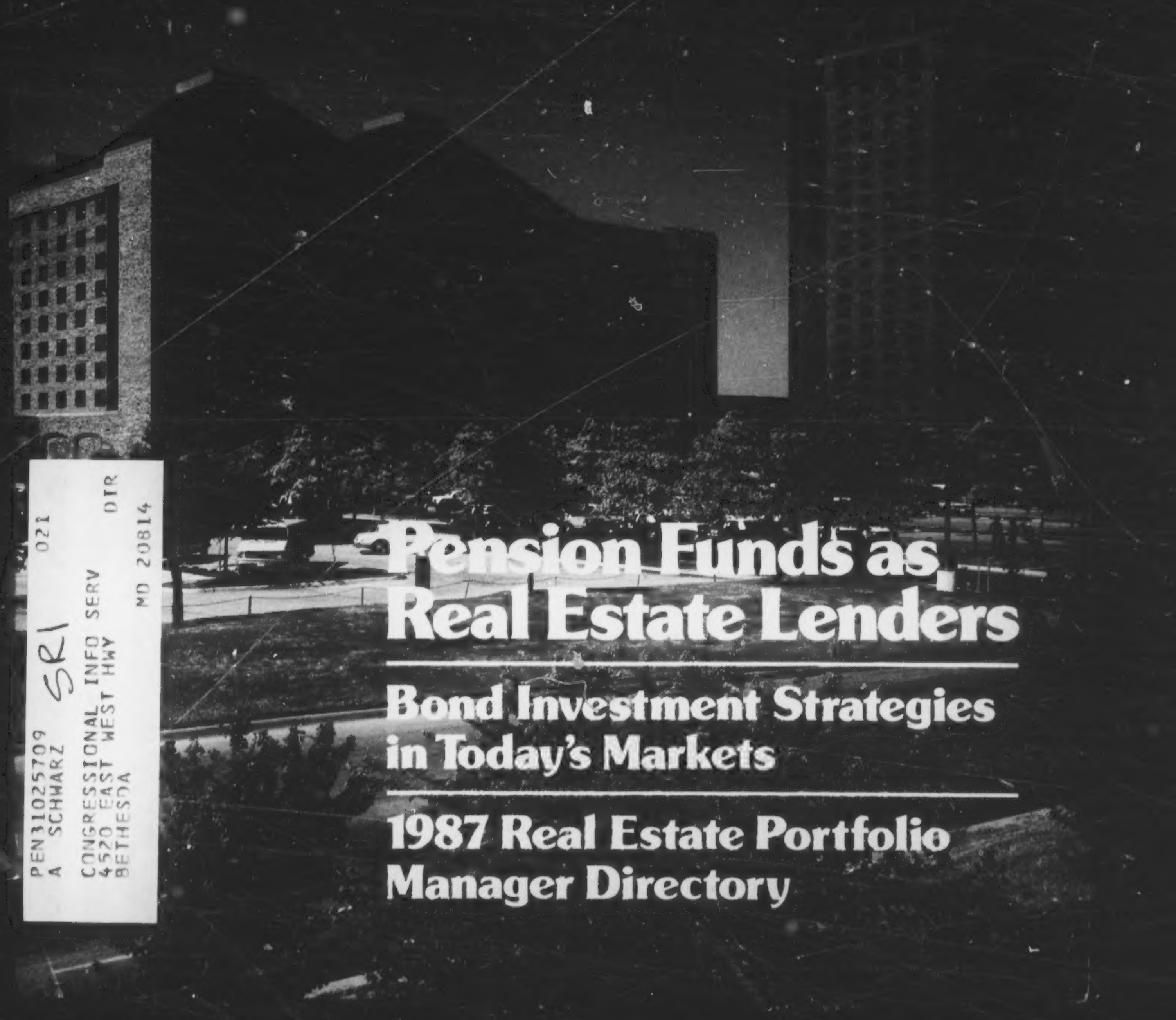

Pension Funds as Real Estate Lenders

Bond Investment Strategies in Today's Markets

1987 Real Estate Portfolio Manager Directory

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Pension World

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***Cover:* The Teacher Retirement System of Texas (TRST) has a $75 million participating first mortgage on the 22-story tower of the Anatole Hotel in Dallas. Photo courtesy of Alex. Brown Realty Advisors, Baltimore, real estate advisor to TRST. A story by Ann W. Campanella on TRST's real estate investments begins on page 22.**

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BPA
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1987 Real Estate Portfolio Manager Directory

The following *Pension World* Real Estate Portfolio Manager Directory lists firms that invest in real estate on behalf of pension fund clients. Although the Directory is not exhaustive, it identifies those firms responding in full to our questionnaire sent out in April 1987. Only those firms indicating their business involves managing real estate portfolios for pension funds are included.

This year's questionnaire was mailed to 286 firms throughout the U.S. and Canada that provide some form of real estate services. The response rate was 34 percent, with 98 of those firms, including 72 from last year's directory, meeting the criteria.

The firms, complete with address and contact person, are listed in alphabetical order. Each entry includes the respondent's total assets under real estate portfolio management and assets managed for pension funds, as well as the number of pension fund clients. Some firms manage assets for pension clients exclusively; some also have taxable clients; some, particularly insurance companies, also hold real estate for their own accounts. Respondents were asked to break down their holdings by types of properties, participation offered (pooled funds, separate accounts, etc.) and geographic diversification of properties.

The survey also includes each respondent's minimum investment requirement, return on investment and fees. Except where otherwise noted, returns on investment are net of fees. For comparison purposes, we asked respondents to provide cumulative returns as well as returns for the last 12 months. Because of differences among managers in computing rates of return, a comparison of returns from firm to firm may not be valid. Unless otherwise indicated, all information is current as of December 31, 1986.

Listings in this Directory are based on information provided by the firms listed. While we have attempted to prepare this Directory as carefully as possible, *Pension World* assumes no responsibility for the accuracy of information presented here.

ACQUEST CAPITAL MANAGEMENT, INC.
300 E. Long Lake Rd., Suite 280
Bloomfield Hills, MI 48013
Contact: David G. Ong, President, (313) 645-5130

Total real estate portfolio assets: $63.1 million
Total pension fund real estate assets: $41.9 million
Pension fund real estate clients: 3
Asset breakdown: 7.1% office, 19.4% industrial, 13.2% retail, 60.3% residential
Participation offered: Separate accounts, direct investment
Geographic diversification: Primarily in Midwest
Minimum investment: $3 million
Return on investment: Not available
Fee: ½ to 1½ points; ½% annual portfolio management fee

AETNA CAPITAL MANAGEMENT
145 King Street West
Toronto, Ontario, Canada M5H 3T7
Contact: John McFadden, Asst. VP, (416) 864-8269

Total real estate portfolio assets: $110 million (Canadian $)
Total pension fund real estate assets: $81 million (Canadian $)
Pension fund real estate clients: 9
Asset breakdown: 77% office, 23% retail
Participation offered: Our pension fund clients invest on a project-by-project basis, in closed-end funds
Geographic diversification: Across Canada, including Toronto, Montreal and Vancouver
Minimum investment: Absolute minimum, $1 million; Normal minimum, $2 to $5 million
Return on investment: Cumulative: not available; Latest annual IRR 13.05%
Fee: 1.5% acquisition fee (one time), 5% of N.O.I. Asset Management Fee, payable quarterly

AETNA LIFE INSURANCE COMPANY
151 Farmington Ave.; YFA3
Hartford, CT 06156
Contact: Patricia R. Bowerman, Mgr., Employee Benefits Division, (203) 275-2547

Total real estate portfolio assets: $22.7 billion
Total pension fund real estate assets: $16.30 billion
Pension fund real estate clients: 385 (in three open-end accounts); 27 (in five closed-end accounts); 5 (individual accounts)
Asset breakdown: Percentages shown are for Aetna's largest commingled, open-end equity real estate account. 43.6% office, 12.9% industrial, 18.8% retail, 6.2% hotel, 6.5% residential, 12% office/R&D
Participation offered: Commingled open and closed-end separate accounts; specialized closed-end accounts; individual accounts; single property accounts
Geographic diversification: Nationwide
Minimum investment: Commingled open-end accounts, none; closed-end accounts, $500,000; individual equity real estate account, target deposit of $100 million (lesser amounts considered); individual residential mortgage account, $10 million
Return on investment: Varies by fund; latest annual, 9.97% for Aetna's first closed-end Real Estate Separate Account I
Fee: Annual management fee varies by account, e.g., equity real estate accounts, 1.0%, participating mortgage accounts, 0.75% of net asset value

AGRIVEST, INC.
500 Winding Brook Dr.
P.O. Box 996
Glastonbury, CT 06033
Contact: James B. McCandless, Executive VP, (203) 659-3711

Total real estate portfolio assets: $450 million
Total pension fund real estate assets: None yet
Pension fund real estate clients: None
Asset breakdown: 100% agricultural
Participation offered: Individually managed separate accounts
Geographic diversification: Nationwide
Minimum investment: $5 million
Return on investment: Not provided
Fee: Acquisition advisory fee based on acquisition cost and annual property management fee based on asset value.

ALDRICH, EASTMAN & WALTCH, INC.
265 Franklin St.
Boston, MA 02110
Contact: Robert J. Hannan, VP, (617) 439-9000

Total real estate portfolio assets: $2.1 billion
Total pension fund real estate assets: $2.1 billion
Pension fund real estate clients: 36
Asset breakdown: 38% office, 12% industrial, 40% retail, 1% hotel, 9% development
Participation offered: Separate accounts, closed-end commingled funds
Geographic diversification: 31% West, 12% South, 14% Midwest, 43% East
Minimum investment: $100 million for separate accounts, $5 million for commingled funds
Return on investment: Not available
Fee: Acquisition 1.25-5.0% of investment amount, depending on complexity of transaction. Asset management - 0.5% of net real estate assets (1.0% for commingled funds) Disposition 1.5% to 5.0% of disposition proceeds (1.0-2.5% if proceeds are reinvested).

AMERICAN AGRICULTURAL INVESTMENT MANAGEMENT CO., INC.
2603 West 22nd St. Suite #17
Oak Brook, IL 60521
Contact: H. Joseph Bourn, President, (312) 571-6616

Total real estate portfolio assets: $14 million
Total pension fund real estate assets: $7.5 million
Pension fund real estate clients: 2
Asset breakdown: 100% farmland
Participation offered: Closed-end funds, separate accounts
Geographic diversification: Nationally in selected agricultural areas
Minimum investment: $500,000
Return on investment: Not provided
Fee: Level 1% of net asset values for closed-end funds. Acquisition fee plus annual management fee for separate accounts

AUGUST-AM CAL ADVISORS, INC.
4730 Woodman Ave., #220
Sherman Oaks, CA 91423
Contact: S. Q. DellaGrotta, Exec. VP, (818) 990-3250

Total real estate portfolio assets: $1.08 billion
Total pension fund real estate assets: $415 million
Pension fund real estate clients: 8
Asset breakdown: 18.9% office, 12.8% industrial, 22.1% retail, 6.0% hotel, 26% residential, 1% land, 5.5% business centers, 7.7 warehouses
Participation offered: Separate accounts; open-end fund; public partnerships
Geographic diversification: National
Minimum investment: $500,000
Return on investment: Cumulative: 9.57% cash-on-cash (1986); Latest annual 16.40%
Fee: 1% first $50 million, 0.75% of 1% over $50 million, 0.50% of 1% over $100 million

THE BALCOR COMPANY
4849 Golf Rd.
Skokie, IL 60077
Contact: William R. Walker, Sr. VP, (312) 676-7787

Total real estate portfolio assets: $1.8 billion
Total pension fund real estate assets: $961 million
Pension fund real estate clients: $278,000
Asset breakdown: 32.4% office, 1.9% industrial, 12.0% retail, 5.9% hotel, 35.6% residential, 12.2% mobile home parks
Participation offered: Public programs featuring debt or debt/equity investments
Geographic diversification: 37 states
Minimum investment: $1,000
Return on investment: Open public programs
Fee: No management fee charged

BANK OF BOSTON
100 Federal Street, 19th Fl.
Boston, MA 02110
Contact: Patricia M. Haralson, Mktg. & Cust. Rel. Specialist; (617) 434-0494

Total real estate portfolio assets: $237.7 million (pooled fund, $215.6 million; separate accounts, $22.1 million)
Total pension fund real estate assets: $202.3 million (pooled fund, $180.2 million; separate accounts, $22.1 million)
Pension fund real estate clients: 166
Asset breakdown: Pooled Real Estate Investment Fund only: 48% office; 21% industrial; 31% retail
Participation offered: Pooled funds, separate accounts
Geographic diversification: National
Minimum investment: Not available
Return on investment: 12 month, 10.53%
Fee: 1% of net asset value

BELGIAN AMERICAN INVESTMENTS
11626 N. Good-Latimer
Dallas, TX 75204
Contact: Hubert Flamant, Chairman, (214) 828-4060

Total real estate portfolio assets: $500 million
Total pension fund real estate assets: $25 million
Pension fund real estate clients: 4
Asset breakdown: 100% land
Participation offered: Separate accounts
Geographic diversification: Dallas and Fort Worth
Minimum investment: $500,000
Return on investment: Not available
Fee: Upfront profit taking or equity participation

BENNETT AND KAHNWEILER REALTY ADVISORS
9700 W. Bryn Mawr
Rosemont, IL 60018
Contact: James S. Smith, President, (312) 671-7911

Information current as of 5/31/87

Total real estate portfolio assets: $450 million
Total pension fund real estate assets: $275 million
Pension fund real estate clients: 2
Asset breakdown: 40% office, 30% industrial, 20% retail, 10% residential
Participation offered: Separate accounts
Geographic diversification: Midwest and West

Minimum investment: $25 million
Return on investment: Not available
Fee: Fixed percent of assets and/or performance-based

ALEX. BROWN REALTY ADVISORS, INC.
225 E. Redwood Street
Baltimore, MD 21202
Contact: William K. Morrill, Jr., (301) 727-3884

Total real estate portfolio assets: $1.3 billion
Total pension fund real estate assets: $734 million
Pension fund real estate clients: 2
Asset breakdown: 59% office, 3% industrial, 19% hotel, 1% residential, 11% retail, 7% closed-end fund
Participation offered: Separate accounts and a real estate securities fund and private placement investments
Geographic diversification: 55% South, 5% East, 35% West, 5% Midwest
Minimum investment: $10 million for closed-end funds, $50 million direct investments
Return on investment: Latest annual: 13.09%
Fee: Varies

CAMBRIDGE REALTY CAPITAL, LTD.
200 W. Superior, Suite 300
Chicago, IL 60610
Contact: Jeffrey A. Davis, President, (312) 943-1911

Total real estate portfolio assets: $7 million
Total pension fund real estate assets: None
Pension fund real estate clients: None
Participation offered: Closed-end
Geographic diversification: Midwest
Minimum investment: $5 million
Return on investment: Not provided
Fee: 1.0%

CANADA LIFE ASSURANCE CO.
65 Queen St. W., Suite 140T
Toronto, Ontario, M5H 2M5, Canada
Contact: Jock K. S. Fleming, Manager, (416) 364-6465

Total real estate portfolio assets: Approximately $500 million
Total pension fund real estate assets: Approximately $201 million
Pension fund real estate clients: 86 real estate accounts
Asset breakdown: 28% office, 20% industrial, 52% retail
Participation offered: Open-ended pooled fund. Cumulative monthly unit value.
Geographic diversification: Properties are located across Canada; approximately 56% in Ontario, 29% in British Columbia, 11% in Alberta, 4% in Atlantic Provinces
Minimum investment: $100,000
Return on investment: 13.8% 4-year return ending 12/31/86. Latest annual: 10.9% ending 12/31/86
Fee: 0.75% annually on first million. 0.40% annually on next $4 million. 0.125% annually on excess

CHESTERTONS USA
630 Fifth Ave., Suite 3170
New York, NY 10111
Contact: George R. Fryer, Jr., Asst. VP, (212) 765-1540

Total real estate portfolio assets: $163 million
Total pension fund real estate assets: $155.5 million
Pension fund real estate clients: 2

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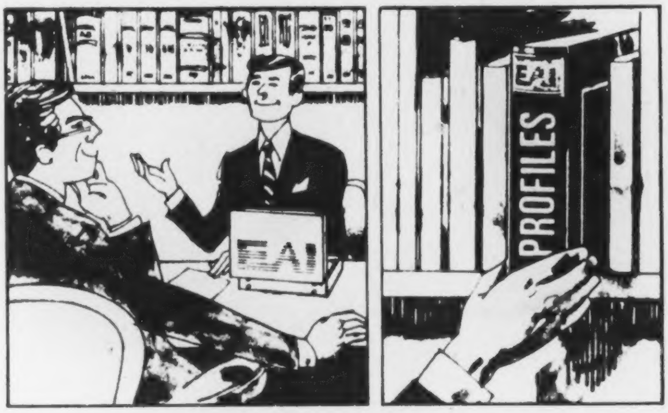

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EAI EVALUATION ASSOCIATES, INC.
25 Sylvan Road South, Westport, CT 06880. (203) 226-7864

Asset breakdown: 88% office, 12% industrial
Participation offered: Separate accounts
Geographic diversification: Nationwide in growth areas
Minimum investment: $5 million
Return on investment: Cumulative: 12% over 3 years; Latest annual 11.5%
Fee: Upon acquisition and disposition with additional management fee based on rental income

CIGNA ASSET ADVISERS, INC.

950 Cottage Grove Road
Hartford, CT 06152
Contact: Richard R. Anderson, Sr. VP, (203) 726-3555

Total real estate portfolio assets: $11.5 billion
Total pension fund real estate assets: $1.3 billion
Pension fund real estate clients: 454
Asset breakdown: 32.1% office, 27.6% industrial, 19.9% retail, 5.5% hotel, 10.4% residential 4.5% mixed use (both retail and hotel space)
Participation offered: Open-end (SA-R), closed end (CERF II), limited partnership for non-qualified funds (Fund T), individual accounts, tax advantaged accounts
Geographic diversificiation: Nationwide - maximum of 50% in any geographic region
Minimum investment: Open-end, $100,000 closed-end, $500,000
Return on investment: Latest annual: Open-end (SA-R) 7.7%; Closed end (CERF I), 10.8%; Closed end (Fund S), 6.8%
Fee: Varies by fund

CITICORP REAL ESTATE INVESTMENT MANAGEMENT

One Citicorp Center
153 East 53rd St., 15th Fl.
New York, NY 10043
Contact: H. Piper Andrews, Jr., VP, (212) 559-9332

Total real estate portfolio assets: $769.4 million
Total pension fund real estate assets: $654.1 million
Pension fund real estate clients: 36

CREEF - Citicorp's Real Estate Equity Fund
Asset breakdown: 93% office, 7% industrial
Participation offered: Open-end
Geographic diversification: 67% East, 5% South, 28% West
Minimum investment: $2 million
Return on investment: 18.1% 1 yr. 12/31/86
Fee: 100 basis points real estate, 15 basis points cash

PMF-I - Participating Mortgage Fund I
Asset breakdown: 100% office
Participation offered: Closed-end (this is presently a liquidating account)
Geographic diversification: 4% East, 23% South, 73% West
Minimum investment: $2 million
Return on investment: 6.4% 1 yr. 12/31/86
Fee: 30 basis points real estate, 15 basis points cash

REIF-I - Real Estate Income Fund I
Asset breakdown: 39% office, 57% retail, 4% residential
Participation offered: Closed-end (This is presently a liquidating account)
Geographic diversification: 52% East, 48% South
Minimum investment: $2 million
Return on investment: 17.5% 1 yr. 12/31/86
Fee: 75 basis points real estate

REIF-II - Real Estate Income Fund II
Asset breakdown: 19% office, 19% industrial, 6% retail, 56% hotel
Participation offered: Closed-end this is presently a liquidating account)
Geographic diversification: 25% East, 75% South
Minimum investment: $2 million
Return on investment: -12.2% 1 yr. 12/31/86
Fee: 75 basis points real estate

CLOVER FINANCIAL CORPORATION

23 W. Park Ave.
Merchantville, NJ 08109
Contact: Robert L. Hogan, Exec. VP, (800) 999-2323

Total real estate portfolio assets: $400 million
Total pension fund real estate assets: $60 million
Pension fund real estate clients: 180
Asset breakdown: 30% retail, 70% residential
Participation offered: Separate accounts
Geographic diversification: Northeast region
Minimum investment: Open
Return on investment: Not determined
Fee: Joint venture, varies

COLDWELL BANKER

437 Madison Ave.
New York, NY 10022
Contact: James G. Nugent, Sr. VP, (212) 207-6122

Total real estate portfolio assets: $775 million
Total pension fund real estate assets: Not available
Pension fund real estate clients: 40
Asset breakdown: Not available
Participation offered: Closed-end funds, separate accounts
Geographic diversification: Nationwide
Minimum investment: $1 million - commingled funds; $20 million - separate accounts
Return on investment: Cumulative, 9.87% 1972-1986; latest annual, 5.2% 12/31/86
Fee: 1.15% on cost, 12.5% over 10% cumulative cash distribution

COPLEY REAL ESTATE ADVISORS

399 Boylston St.
Boston, MA 02116
Contact: John C. Phillips, Jr., Principal, (617) 578-1200

Information current as of 3/31/87

Total real estate portfolio assets: $7.7 billion
Total pension fund real estate assets: $5.5 billion
Pension fund real estate clients: 194
Asset breakdown: 36.0% office, 30.0% industrial, 1.5% retail, 2.0% hotel, 5.5% residential, 8.0% land, 17.0% R&D
Participation offered: Copley offers open-end and separate accounts. After successfully closing its second closed-end fund, a third is anticipated to open by mid to late 1988
Geographic diversification: Phoenix, AZ; Northern and Southern CA; Denver, CO; Florida; Atlanta, GA; Greater Boston area; suburban New York City; Dallas and Houston, TX; Washington, DC metropolitan area; the Pacific Northwest
Minimum investment: Separate account, $100 million; open-end, $100,000
Return on investment: Cumulative, DPA (open-end fund): 21.5%, 3/31/82-3/31/87; latest annual, DPA: 16.8%
Fee: DPA: Management fee of 1.25% per year on the net real estate assets of the fund and 0.25% per year on cash reserves deducted quarterly. Administrative fee of $2,000 per year, deducted quarterly. Separate accounts: Individual basis. Base fee is charged on gross assets plus a negotiated incentive fee.

CORPORATE PROPERTY INVESTORS

305 E. 47th St.
New York, NY 10038
Contact: Warren Hamer, (212) 421-8200

Total real estate portfolio assets: $3.2 billion
Total pension fund real estate assets: $2.0 billion
Pension fund real estate clients: 30
Asset breakdown: 12% office, 5% industrial, 82% retail
Participation offered: REIT shares
Geographic diversification: 40% East, 18% West, 35% South, 7% Midwest
Minimum investment: $5 million
Return on investment: 18.78% annual for 12 years; latest annual, 20.06%
Fee: None

DEBENHAM TEWSON & CHINNOCKS ASSOCIATES INC.

450 Park Ave. #1902
New York, NY 10022
Contact: C. J. Wood, (212) 758-8218

Total real estate portfolio assets: $350 million
Total pension fund real estate assets: $350 million
Pension fund real estate clients: 4
Asset breakdown: 60% office, 40% industrial
Participation offered: Separate non-discretionary accounts
Geographic diversification: Nationwide
Minimum investment: $5 million
Return on investment: Not available
Fee: Separately negotiated with each client

EASTDIL REALTY, INC.

40 W. 57th Street
New York, NY 10019
Contact: Donald E. Conover, VP, (212) 315-7288

Information current as of 3/31/87

Total real estate portfolio assets: $2.3 billion
Total pension fund real estate assets: $2.0 billion
Pension fund real estate clients: 10
Asset breakdown: 60% office, 15% industrial, 13% retail, 1% hotel, 1% residential, 11% R&D
Participation offered: Real estate separate accounts
Geographic diversification: 3% East, 30% South, 20% Midwest, 47% West
Minimum investment: Separate accounts: $50 million
Return on investment: Not available
Fee: Not available

THE EDGECOMBE GROUP

196 Adelaide St. West
Toronto, Ontario, Canada M5H 1W7
Contact: Michael F. Walsh, Director, Portfolio Marketing, (416) 977-1980

Total real estate portfolio assets: $600 million real estate, $1.4 million mortgage
Total pension fund real estate assets: $150 million real estate, $350 million mortgage
Pension fund real estate clients: 60
Asset breakdown: Open-end fund: 23% office, 55% industrial, 23% retail
Participation offered: Separate accounts, open-end - Nalaco Real Estate Fund, closed-end - First Edgecombe Pension Properties Ltd.

Geographic diversification: Open-end fund: Ontario/Quebec - 55%, Eastern - 11%, West/Central - 34%
Minimum investment: N/A
Return on investment: 11.6% 6 yrs. since inception of the Nalaco Real Estate Fund; latest annual 14.08%
Fee: 0.065% of assets/month for open-end fund

RICHARD ELLIS, INC.

527 Madison Ave.
New York, NY 10022
Contact: David R. Hodes, Sr. VP, (212) 355-4810

Total real estate portfolio assets: $2.4 billion
Total pension fund real estate assets: $1.8 billion
Pension fund real estate clients: 8
Asset breakdown: 70% office, 2% industrial, 28% retail
Participation offered: Separate accounts
Geographic diversification: National
Minimum investment: $50 million
Return on investment: Varies, based upon different portfolios
Fee: Based upon actual services rendered

EQUITABLE REAL ESTATE INVESTMENT MANAGEMENT, INC.

787 7th Ave.
New York, NY 10019
Contact: Joyce R. Frater, Sr. VP, (212) 554-4213

Total real estate portfolio assets: $29.5 billion (including Equitable Mortgage Resources and Equitable Agri-business)
Total pension fund real estate assets: $5.8 billion (excluding Equitable's General Account)
Pension fund real estate clients: 254
Asset breakdown: 43.5% office, 15.7% industrial, 31.9% retail, 8.7% hotel, 0.2% land/specialized
Participation offered: Open and closed-end funds as well as single client separate and advisory accounts
Geographic diversification: 30% East, 29% South, 15% Midwest, 26% West
Minimum investment: Prime Property Fund (open-end fund): $1 million; closed-end funds: $2 million; Single client accounts: $100 million in 3 years
Return on investment: Gross of fund—Cumulative: Prime Property Fund: since inception (13.25 yrs.) 12.0%; latest annual: 8.4%; New Properties Fund: Since inception (4.50 yrs) 12.8%; Latest annual: 10.1%
Fee: Varies, depending on investment vehicle

EQUITEC INSTITUTIONAL REALTY ADVISERS, INC.

7677 Oakport St.
P.O. Box 2470
Oakland, CA 94614
Contact: Don Jackson, Sr. VP, (415) 430-9900

Total real estate portfolio assets: $1.9 billion
Total pension fund real estate assets: $150 million
Pension fund real estate clients: 20
Asset breakdown: 100% office
Participation offered: Closed end group trust
Geographic diversification: East, West, Midwest, South, major metropolitan areas
Minimum investment: $1 million
Return on investment: 1985 to current - 25.9%; latest annual, 11.6%
Fee: 1.15% asset management fee

F.I.A. ASSOCIATES

A Div. of Merabank
1601 Response Rd., Suite 300
Sacramento, CA 95815
Contact: James L. Sublett, Sr. Exec. VP, (916) 920-4051

Total real estate portfolio assets: $1.8 billion
Total pension fund real estate assets: $1.8 billion
Pension fund real estate clients: 4 separate accounts; 4 in closed-end fund
Asset breakdown: 48.2% office, 15.6% industrial, 16.3% retail, 2.2% hotel, 3.3% residential, 7.7% mixed use, 6.7% land lease
Participation offered: Separate accounts, closed-end funds
Geographic diversification: Nationwide
Minimum investment: $50 million in separate account, $500,000 in closed-end
Return on investment: 9.38% real rate in calendar year 1986
Fee: Negotiated, based on size and portfolio structure

FIRST ASSET REALTY ADVISORS

120 S. 6th St.
Minneapolis, MN 55480
Contact: Charles Ingwalson, President, (612) 370-4729

Total real estate portfolio assets: $75.8 million as of 3/31/87
Total pension fund real estate assets: $68.9 million
Pension fund real estate clients: 14
Asset breakdown: 13% office, 87% retail
Participation offered: Open-end & separate accounts
Geographic diversification: Nationwide
Minimum investment: $100,000
Return on investment: 11.9% 9/30/81 to 12/31/86; latest annual: 42%
Fee: 1.25% annually of net asset value

FIRST CHICAGO INVESTMENT ADVISORS

Three First National Plaza
Chicago, IL 60670-0119
Contact: J. William Baker, VP, (312) 732-7641

Total real estate portfolio assets: $1 billion
Total pension fund real estate assets: $954 million
Pension fund real estate clients: 128
Asset breakdown: 32% office, 24% industrial, 24% retail, 20% residential
Participation offered: 1 diversified open-end fund, 2 specialty closed-end funds and custom tailored direct accounts
Geographic diversification: 28% East, 30% West; 22% South, 20% Midwest (Fund F, open-end fund)
Minimum investment: $1 million (Fund F)
Return on investment: Cumulative, 10.9% (5 yrs.); latest annual, 5.2% (12/31/86) (Fund F)
Fee: 1.2% on assets (Fund F)

FIRST REPUBLICBANK

P.O. Box 241
Dallas, TX 75221
Contact: David J. Pittman, Sr. VP & Director, Corporate Marketing; Marvin L. Parish, VP, Investment Marketing, (214) 922-3589

Total real estate portfolio assets: $1.5 billion
Total pension fund real estate assets: $41 million
Pension fund real estate clients: 45
Asset breakdown: 46% office, 30% industrial, 24% retail
Participation offered: All existing clients are in an Open-End Fund. We also offer separate accounts
Geographic diversification: 67% South, 33% West
Minimum investment: 1 unit - $1,488 unit value as of 3/31/87
Return on investment: Cumulative, 46.75% 5 years; latest annual, 0.04% as of 12/31/86
Fee: 1% acquisition fee charged to fund upon purchase of an asset. 1% annual asset management fee charged to clients

FIRST WACHOVIA BANK & TRUST

P.O. Box 3099
Winston-Salem, NC 27150
Contact: Cindy Christopher, Marketing Consultant, (919) 770-4169

Total real estate portfolio assets: $612.5 million
Total pension fund real estate assets: $585.9 million
Pension fund real estate clients: 277
Asset breakdown: 3.7% office, 63.6% industrial, 32.7% land
Participation offered: Open-end pooled fund and separate account management
Geographic diversification: National
Minimum investment: $100,000
Return on investment: Cumulative—13.9% for 10 yrs., 10.2% for 5 yrs., 10.4% for 3 yrs. Latest annual—7.2%
Fee: 1.125% of market value of the plan; $450 administrative fee

FIRST WISCONSIN TRUST COMPANY

P.O. Box 2054
Milwaukee, WI 53201
Contact: Earl D. Lillydahl, VP, (414) 765-4844

Total real estate portfolio assets: $20 million
Total pension fund real estate assets: $7.5 million
Pension fund real estate clients: 37
Asset breakdown: 43% office, 35% industrial, 22% retail
Participation offered: Open-end fund units
Geographic diversification: Currently Wisconsin and Indiana
Minimum investment: $8,000, i.e., 5 units
Return on investment: Cumulative: 46.96% compounded over 57 mos., latest annual: 9.79%
Fee: 0.25% liquid assets; 1.5% real estate assets

FOREST INVESTMENT ASSOCIATES

11 Piedmont Center, Suite 404
Atlanta, GA 30305
Contact: David S. Graham, Principal, (404) 239-0986

Total real estate portfolio assets: $25 million
Total pension fund real estate assets: $25 million
Pension fund real estate clients: 2
Asset breakdown: 100% timber
Participation offered: Separate accounts. Closed-end funds may be offered in the future
Geographic diversification: Nationwide, emphasis on southern United States
Minimum investment: $10 million
Return on investment: Not available
Fee: 1.2% per annum of the fair market value of timberland

GARRETT REALTY ADVISORS

4710 Fountain Pl.
1445 Ross Ave. LB-205
Dallas, TX 75202
Contact: Joe Garrett, (214) 855-6410

Total real estate portfolio assets: $20 million

Total pension fund real estate assets: $20 million
Pension fund real estate clients: 4
Asset breakdown: 60% industrial, 20% retail, 20% land
Participation offered: Separate accounts, closed-end funds and will soon form industrial property closed-end fund ($15 million)
Geographic diversification: Land — Texas only; retail and industrial nationwide
Minimum investment: $1 million
Return on investment: Not available
Fee: Negotiable

GOLDMAN SACHS REAL ESTATE

85 Broad St.
New York, NY 10004
Contact: Thomas Morgan, (212) 902-5696

Total real estate portfolio assets: $625 million
Total pension fund real estate assets: $340 million
Pension fund real estate clients: 15
Asset breakdown: 60% office, 12% industrial, 7% retail, 11% hotel, 10% land
Participation offered: Separate accounts
Geographic diversification: Nationwide, but with concentration on East Coast and Midwest
Minimum investment: $100 million 2-3 yrs
Return on investment: Cumulative, 10.8%; Latest annual, 7.7% (Returns shown for commingled fund only; represents approximately 60% of assets under management. Other returns are confidential, but are higher than this fund
Fee: Varies by account, but approximates 1.2% per year on net equity at market value

GROUP ONE INVESTMENTS

77 West Washington St. Suite 1005
Chicago, IL 60602
Contact: Robert Weitzman, Partner, (312) 346-3434

Total real estate portfolio assets: $200 million
Total pension fund real estate assets: $25 million
Pension fund real estate clients: 30
Asset breakdown: 20% office, 10% industrial, 20% retail, 50% residential
Participation offered: Special accounts
Geographic diversification: Nationwide with an emphasis in the Ohio Valley area
Minimum investment: $500,000
Return on investment: Cumulative 9+%, Latest annual, 8 ½%
Fee: Tailored to the specific transaction

JOHN HANCOCK FINANCIAL SERVICES HANCOCK TIMBER RESOURCE GROUP

P.O. Box 111
T-49, Investment Marketing
Boston, MA 02117
Contact: Richard N. Smith, Investment Officer-Timber Real Estate, (617) 421-5273

Total real estate portfolio assets: $11.1 billion
Total pension fund real estate assets: $250 million (under management and committed funds)
Pension fund real estate clients: 8
Asset breakdown: 100% timber
Participation offered: Closed-end pooled and non-pooled separate accounts
Geographic diversification: 40% Pacific Northwest, 60% Southeast
Minimum investment: $1 million for pooled funds, $20 million for non-pooled accounts
Return on investment: Varies by fund
Fee: Varies by fund; generally base fee plus incentive linked to performance

JOHN HANCOCK PROPERTIES, INC. AN INDEPENDENT SUBSIDIARY OF JOHN HANCOCK FINANCIAL SERVICES

P.O. Box 111
T-49, Investment Marketing
Boston, MA 02117
Contact: Ronald L. Garner, Senior Real Estate Investment Officer, (617) 421-3639

Total real estate portfolio assets: $11.1 billion
Total pension fund real estate assets: $700 million
Pension fund real estate clients: 73
Asset breakdown: 5% showroom/office/R&D, 8% industrial/warehouse, 6% retail, 16% hotel, 25% residential, 40% office only
Participation offered: Limited partnerships and open and closed-end pooled separate accounts
Geographic diversification: 3% PR Canada, 37% East, 25% South, 18% Midwest, 17% West
Minimum investment: Varies per fund, but generally $5 million
Return on investment: Varies per fund
Fee: Varies per fund

HARRIS TRUST & SAVINGS BANK

111 W. Monroe St. - 6C
Chicago, IL 60603
Contact: John K. Rutledge, VP, (312) 461-6346

Total real estate portfolio assets: $22 million
Total pension fund real estate assets: $22 million
Pension fund real estate clients: 150
Asset breakdown: 29% office, 35% industrial, 36% retail
Participation offered: Open-end fund
Geographic diversification: Midwest 50%; Southwest 35%; Southeast 15%
Minimum investment: $500,000
Return on investment: 46% 1/1/83-12/31/86; latest annual 9.03%
Fee: 0.75% of real estate investments

HAYDEN, TOLZMANN & ASSOCIATES, INC.

(formerly Hayden Associates, Inc.)
P.O. Drawer 708
Bloomfield, CT 06002-0708
Contact: David C. Tolzmann, President, (203) 243-1481

Total real estate portfolio assets: $36.3 million
Total pension fund real estate assets: $36.3 million
Pension fund real estate clients: 1
Asset breakdown: 45.7% office, 30.5% industrial, 23.8 retail
Participation offered: Separate accounts
Geographic diversification: 20.4% East, 19.3% Midwest, 24.5% West, 35.8% South
Minimum investment: $10 million
Return on investment: Cumulative, 12.93% (4-yr. average, 1983-1986); Latest annual, 10.31
Fee: Monthly retainer plus acquisition and disposition fee, plus monthly asset management fee

HEITMAN ADVISORY CORPORATION

180 N. LaSalle St.
Chicago, IL 60601
Contact: David M. Glickman, President, (312) 855-5700

Total real estate portfolio assets: $3.6 billion
Total pension fund real estate assets: $3.4 billion
Pension fund real estate clients: 34
Asset breakdown: 38.1% office, 10.4% industrial, 26.1% retail, 25.4% mixed use
Participation offered: Closed-end, discretionary and advisory separate accounts
Geographic diversification: Nationwide
Minimum investment: $2 million
Return on investment: Not available
Fee: Available on request

HOSPITAL TRUST

1 Hospital Trust Plaza
Providence, RI 02903
Contact: Dan A. Woolley, VP, (401) 278-7606

Total real estate portfolio assets: Not provided
Total pension fund real estate assets: $9.9 million
Pension fund real estate clients: 18
Asset breakdown: 26% office, 74% industrial
Participation offered: Open-end fund
Geographic diversification: 26% East, 40% South, 34% Midwest
Minimum investment: $10,000
Return on investment: Latest annual (as of 12/31/86) 8.1%
Fee: 1⅛% charged quarterly on net real estate assets (charged directly to participants, not through the fund)

ICC REALTY ADVISERS, INC.

56 E. Pine St., #200
Orlando, FL 32801
Contact: Byron W. Glitz, President, (305) 841-6241

Total real estate portfolio assets: $48 million as of 3/31/87
Total pension fund real estate assets: $48 million as of 3/31/87
Pension fund real estate clients: 16 accounts as of 5/31/87
Asset breakdown: 20% office, 20% industrial, 20% retail, 20% hotel, 20% residential
Participation offered: Closed-end funds
Geographic Diversification: Eastern and Southwest United States
Minimum investment: $1 million
Return on investment: Not available
Fee: Varies by fund

JMB INSTITUTIONAL REALTY CORPORATION

875 N. Michigan Ave., Suite 3960
Chicago, IL 60611
Contact: John S. Lillard, President, (312) 915-1900

Total real estate portfolio assets: $15.3 billion (includes taxable investors with affiliated company)
Total pension fund real estate assets: $1.4 billion
Pension fund real estate clients: 105 (Does not include our tax-exempt endowment and foundation investors)
Asset breakdown: 47% office, 53% retail
Participation offered: Closed-end commingled funds and a limited number of separate accounts
Geographic diversification: 24% East, 29% South; 22% Midwest; 25% West
Minimum investment: $1 million (commingled); $100 million (separate account)
Return on investment: Cumulative: JMB Group Trust I (since inception 8/29/80), 17.9%; Latest annual, JMB Group Trust I-15.4%
Fee: 1.25% of gross real estate asset values plus 3.75% of gross revenues from property operations in lieu of property management fees (current JMB Group Trust Funds)

JOHNSTOWN INSTITUTIONAL ADVISORS

2000 Powell St.
Emeryville, CA 94608
Contact: Tim Marinec, Sr. VP, (415) 652-7171

Total real estate portfolio assets: $5.2 billion as of May 1987
Total pension fund real estate assets: $680 million total tax exempt as of May 1987
Pension fund real estate clients: 151,771 total tax exempt assets accounts
Asset breakdown: 30% office, 15% industrial, 4% retail, 51% residential
Participation offered: Closed end commingled fund Johnstown Institutional Apartment Fund, Separate Account Management, Property/Portfolio Management
Geographic diversification of properties: Nationwide
Minimum investment: $1 million
Return on investment: Cumulative: NA—first fund solely for pension investors currently in offering
Fee: Organizational fee 1% paid at subscription; investment management fee 1.25% paid quarterly; prop. mgmt—5% of rental income paid monthly

JONES LANG WOOTON REALTY ADVISORS

101 East 52nd St.
New York, NY 10022
Contact: John A. Weisz, Principal, (212) 688-8181

Total real estate portfolio assets: $1.5 billion
Total pension fund real estate assets: $900 million
Pension fund real estate clients: 4
Asset breakdown: 53% office, 5.5% industrial, 18% retail, 18% hotel, 5.5 mixed use
Participation offered: Separate accounts only
Geographic diversification: Nationwide
Minimum investment: $200 million over 3 years
Return on investment: Confidential
Fee: Confidential

KARSTEN REALTY ADVISORS

12121 Wilshire Blvd., #900
Los Angeles, CA 90025
Contact: John M. Lundsten, Principal, (213) 826-0035

Total real estate portfolio assets: $1.3 billion
Total pension fund real estate assets: $844.4 million
Pension fund real estate clients: 19
Asset breakdown: 38% office, 29% industrial, 15% retail, 5% hotel 8% land, 2% mixed-use, 5% misc.
Participation offered: Closed-end fund (closed to subscriptions), separate accounts
Geographic diversification: Nationwide, with concentration in West and Southwest
Minimum investment: $20 million
Return on investment: Gross of fee—Cumulative: Commingled Fund: 10.4% (2-year return), Separate acccounts: 14.3% (5-year return); Latest annual Commingled Fund: 9.9%, Separate accounts: 10.3%
Fee: Negotiable, generally with 1% to 2% acquisition fee and 0.5% to 0.75% asset management fee

KENNEDY ASSOCIATES REAL ESTATE COUNSEL, INC.

2400 Financial Center
Seattle, WA 98161
Contact: Jim C. Snyder, President, (206) 623-4739

Total real estate portfolio assets: $630 million
Total pension fund real estate assets: $630 million
Pension fund real estate clients: 8 separate accounts; 82 in commingled fund
Asset breakdown: 63.8% office, 26.5% industrial, 7.1% retail, 2.6% hotel
Participation offered: Separate accounts, open-end fund (Multi-Employer Property Trust)
Geographic diversification: National
Minimum investment: Separate accounts—$25 million; open-end fund — no minimum
Return on investment: Cumulative - 546% from 4/1/76 to 12/31/86. Latest annual, 9.9%
Fee: Negotiable

LANDAUER ADVISORS, INC.

335 Madison Ave.
New York, NY 10017
Contact: Peter A. Peyser, Sr. VP, (212) 687-2323

Total real estate portfolio assets: $321 million
Total pension fund real estate assets: $321 million
Pension fund real estate clients: 8
Asset breakdown: 78% office, 2% industrial, 20% retail
Participation offered: Closed-end funds, separate accounts, asset management services, acquisition services
Geographic diversification: National
Minimum investment: For separate accounts, minimum $25 million. For the Landauer Momentum Fund, $2.5 million
Return on investment: Landauer Fund I—1/1/84-12/31/86 12.6%. Latest annual, 8.9%
Fee: Separate account fees for acquisitions, dispositions; asset management and financing services vary according to the amount invested, number of properties to be purchased or managed, complexity of the deal structures to be used and the amounts of discretionary authority allocated. Closed-end fund fees are currently as follows: The Landauer Momentum Fund—1.25% of the subscription price for the first five years. 1.00% of the net asset value of the Fund for the remaining 6-10 years.

LANDVEST, INC.

Ten Post Office Square
Boston, MA 02109
Contact: Richard Perkins, President, (617) 723-1800

Total real estate portfolio assets: $40 million
Total pension fund real estate assets: $20 million
Pension fund real estate clients: 4
Asset breakdown: 100% timber
Participation offered: Separate accounts
Geographic diversification: East Coast
Minimum investment: $500,000
Return on investment: Variable
Fee: Variable

LASALLE ADVISORS LIMITED

11 South LaSalle St.
Chicago, IL 60603
Contact: West, William N. Thompson, VP, (415) 392-5522; Midwest, Christopher J. Burke, VP, (312) 782-5800; Mideast, Hugh E. Reams, Jr., VP, (312) 782-5800; East, Steven L. Wagner, VP, (212) 661-6020

Total real estate portfolio assets: $2.2 billion
Total pension fund real estate assets: $1.7 billion
Pension fund real estate clients: 60
Asset breakdown: 53% office, 12% industrial, 35% retail
Participation offered: Closed-end funds; separate accounts and urban land fund
Geographic diversification: 23% East, 24% South, 37% Midwest, 16% West
Minimum investment: $5 million for closed-end funds; $100 million for separate accounts and $1 million for the urban land fund
Return on investment: Cumulative: 17.05% LaSalle Street Fund 1981-1986; 12.36% LaSalle Fund II 1985-1986; Latest annual: 17.05% LaSalle Street Fund; 19.10% LaSalle Fund II
Fee: Annual fee of 1.25% of net real estate assets

LEHNDORFF & BABSON REAL ESTATE COUNSEL

One Boston Place
Boston, MA 02108
Contact: James S. White, Exec. VP, (617) 723-3074
Total real estate portfolio assets: $1.6 billion
Total pension fund real estate assets: $544 million
Pension fund real estate clients: 27
Asset breakdown: 31% office, 11% industrial, 58% retail
Participation offered: Closed-end funds and separate account management
Geographic diversification: 8% West, 77% East, 15% South
Minimum investment: $1 million for closed-end funds
Return on investment: 14.6% (2 years ending 12/31/86); latest annual, 10.7%
Fee: 1.25% per annum based on fair market value of the real property assets of the Group Trust as of Dec. 31

LOEB PARTNERS REALTY

521 Fifth Ave.
New York, NY 10175
Contact: Gary L. Naughton, VP, (212) 883-0371

Total real estate portfolio assets: $450 million
Total pension fund real estate assets: $75 million
Pension fund real estate clients: 2
Asset breakdown; 80% office, 17% retail, 1% hotel, 2% residential
Participation offered: Separate accounts
Geographic diversification: Nationwide
Minimum investment: $2 million
Return on investment: Annual yields of 15-20%
Fee: A percentage of real estate assets based upon asset size and type of investment

LOMAS & NETTLETON

2001 Bryan Tower, Suite 3970
P.O. Box 655644
Dallas, TX 75265
Contact: Allen C. Gunter, Sr. VP, (214) 746-7317

Total real estate portfolio assets: $24.1 billion
Total pension fund real estate assets: $511.7 million
Pension fund real estate clients: 92
Asset breakdown: 74% office, 25% industrial, 1% retail
Participation offered: Open and closed-end funds and separate accounts
Geographic diversification: Continental U.S.
Minimum investment: $15 million
Return on investment: Cumulative 11% 1982-86; Latest annual, 10.39%
Fee: Negotiable

MAIER & SIEBEL, INC.

80 E. Sir Francis Drake Blvd.
Larkspur, CA 94939
Contact: Peter K. Maier, President, (415) 461-3890

Total real estate portfolio assets: $80 million
Total pension fund real estate assets: Not available
Pension fund real estate clients: 1
Asset breakdown: 100%
Participation offered: Separate accounts
Geographic diversification: 11 Western states
Minimum investment: $4 million

Return on investment: 14.08% 1967-1987, Latest annual, 8.8%
Fee: 1% of value

MASSACHUSETTS MUTUAL LIFE INSURANCE CO.
1295 State Street
Springfield, MA 01111
Contact: Leo J. Polverini, Jr., VP, (413) 788-8411

Total real estate portfolio assets: $3.2 billion
Total pension fund real estate assets: $53.5 million
Pension fund real estate clients: 52
Asset breakdown: 37% office, 25% industrial, 38% retail
Participation offered: Open-end fund
Geographic diversification: 25% East, 30% South, 25% Midwest, 20% West
Minimum investment: $100,000
Return on investment: Cumulative—9.60%, 5 years ended 12/31/86; latest annual—6.75%
Fee: 1% of assets plus 0.35% of first $500,000; 0.15% of next $1.5 million; 0.10% next $3.0 million; 0.05% over $5.0 million

MBANK/MREALTY
P.O. Box 225415
Dallas, TX 75265
Contact: Mark J. Dunbar, VP, (214) 698-5880

Total real estate portfolio assets: $230 million
Total pension fund real estate assets: $70 million
Pension fund real estate clients: 73
Asset breakdown: 38% office, 62% retail, 1% land
Participation offered: Open-end fund; separate accounts
Geographic diversification: Sunbelt
Minimum investment: $50,000 for fund; $5 million for separate account
Return on investment: Cumulative: 40.7% — 4 years; latest annual, 6.9%

MCMAHAN REAL ESTATE ADVISORS, INC.
201 California Street, Suite 400
San Francisco, CA 94111
Contact: Frank C. Harding, Jr., VP, public and Taft-Hartley plans; Jean C. Hurley, VP, corporate, endowment and foundation clients, (415) 433-7770

Total real estate portfolio assets: $407 million
Total pension fund real estate assets: $407 million
Pension fund real estate clients: 14
Asset breakdown: 60% office, 15% industrial, 25% retail
Participation offered: One closed-end fund
Geographic diversification: West, Northwest, South, Southwest
Minimum investment: $2 million
Return on investment: 8.5% last 5 yrs.; latest annual, 7.9%
Fee: Negotiable

H. D. MCNEE REALTY ADVISERS
7811 Mission Gorge Rd., Suite N
San Diego, CA 92120
Contact: Henry H. Williams, Exec. VP, (619) 583-9916

Total real estate portfolio assets: $57.2 million
Total pension fund real estate assets: $57.2 million
Pension fund real estate clients: 3
Asset breakdown: 16% residential, 84% commercial
Participation offered: Individual direct investment accounts
Geographic diversification: Southwest
Minimum investment: Flexible
Return on investment: Varies
Fee: Varies

MELLON REAL ESTATE INVESTMENT MANAGEMENT CORP.
551 Madison Avenue
New York, NY 10022
Contact: Karin E. Shewer, VP, (212) 702-4049

Total real estate portfolio assets: $1.1 billion
Total pension fund real estate assets: $1 billion
Pension fund real estate clients: 11
Asset breakdown: 63.9% office, 14.8% industrial, 10.2% retail, 3.3% hotel, 7.8% residential
Participation offered: Separate accounts
Geographic diversification: 20.3% East; 17.1% South; 25.7% West; 36.9% Midwest
Minimum investment: $10 million
Return on investment: Not provided; Mellon reports cash returns only, not estimated appreciation
Fee: Acquisition fee: 1.5% of purchase price. Portfolio management fee: 0.5% of 1% of the asset value as determined by capitalizing the property income received at 10%. Disposition fee: 1% of net sales price

L. J. MELODY & COMPANY
5847 San Felipe, Suite 4400
Houston, TX 77057
Contact: Robert D. Barkley, VP, (713) 787-1919

Total real estate portfolio assets: $2.02 billion
Total pension fund real estate assets: $750 million
Pension fund real estate clients: 3
Asset breakdown: 46% office, 3.5% industrial, 31% retail, 6% hotel, 9% residential (multifamily), 4.5% mixed use
Participation offered: Direct investment in individual properties on a separate account basis through equity acquisitions, joint ventures, and fixed rate and participating mortgages
Geographic diversification: National
Minimum investment: $10 million
Return on investment: Because of varying investment criteria and objectives, returns are different for each client
Fee: Fees for acquisition, disposition and asset management are quoted on a declining basis as size of investment increases

MERCANTILE BANK N.A.
P.O. Box 387
St. Louis, MO 63166
Contact: William H. Laird, VP, (314) 425-2742

Total real estate portfolio assets: $13 million
Total pension fund real estate assets: $13 million
Pension fund real estate clients: 26
Asset breakdown: 22% office, 16% industrial, 32% retail, 7% hotel, 11% residential, 12% other
Participation offered: Open-end fund
Geographic diversification: 23% Mid-Atlantic, 19% Southwest, 10% Central, 29% West, 5% Southeast, 3% South Central, 4% Northeast, 1% Northwest, 6% North Central
Minimum investment: $10,000
Return on investment: Cumulative: 7.8% (7 mos. 6/1/86 - 12/31/86), Latest annual: 13.4% (7 mos. annualized)
Fee: 0.6% of asset value plus 0.25% on cash

METROPOLITAN LIFE INSURANCE COMPANY
One Madison Avenue
New York, NY 10010
Contact: East Coast: Bruce Kosakowski, National Director, (212) 578-8637 or West Coast: Stacey Smith Orme, National Director, Metropolitan Life Insurance Company, 101 Lincoln Center Dr., Foster City, CA 94404, (415) 574-8181

Total real estate portfolio assets: $22.2 billion
Total pension fund real estate assets: $599 million

Account RE
Pension fund real estate clients: 28
Asset breakdown: 70% office, 7% industrial, 9% retail, 10% hotel, 2% land, 2% mixed use
Participation offered: Open-end fund
Geographic diversification: 6% Southwest, 21% West, 18% East, 16% Southeast, 39% Central
Minimum investment: $100,000
Return on investment (gross of fee): Annualized—9.6% 1 yr.; 12.6% 3 yrs.; 13.5% 5 yrs.
Fee: Metropolitan charges Account RE with a management fee quarterly based upon the net assets of the Account. The charge to each participant on an annual basis is 1.25% of the first $10 million of the participant's share of net assets and 1% for net assets in excess of $10 million

Tower Fund
Pension fund real estate clients: 19
Percentage breakdown: 35% office, 12% warehouse, 29% retail, 24% research/development
Participation offered: Open-end fund
Geographic diversification: 5% Southwest, 24% West, 29% East, 36% South, 6% Central
Minimum investment: $100,000
Return on investment (gross of fee): Annualized—10.4% 1 yr.; 12.3% 3 yrs.; 12.9% 5 yrs.
Fee: Metropolitan charges Tower Fund with a management fee quarterly based upon the net assets of the Account. The charge to each participant on an annual basis is 1.25% of the first $10 million of the participant's share of net assets and 1% for net assets in excess of $10 million

Closed End Series I
Pension fund real estate clients: 6
Percentage breakdown: 100% office
Participation offered: Closed-end fund
Geographic diversification: 41% East, 14% Central, 45% West
Minimum investment: $1 million
Return on investment (gross of fee):
Annualized—8.3% 1 yr.; 8.5% 2 yrs.
Fee: Metropolitan charges the Closed End Series with a management fee quarterly based upon the net assets of the Account. For CRE-I and CRE-II, the charge on an annual basis is 1.25% of net assets.

Closed End Series II
Pension fund real estate clients: 5
Percentage breakdown: 68% office, 32% research/development
Participation offered: Closed-end fund
Geographic diversification: 66% West, 34% South
Minimum investment: $1 million
Return on investment (gross of fee): Annualized—18.6% 1 yr.
Fee: Metropolitan charges the Closed End Series with a management fee quarterly based upon the net assets of the Account. For CRE-I and CRE-II, the charge on an annual basis is 1.25% of net assets

Guaranteed Real Estate Contract (GREC)
Pension fund real estate clients: 22
Percentage breakdown: 21% office, 22% retail, 57% research/development

Participation offered: Similar to a guaranteed interest contract
Geographic diversification: 21% Southwest, 28% West, 29% Southeast, 22% Central
Minimum investment: $500,000
Return on investment (gross of fee): Annualized—5.76% 1 yr.
Fee: Metropolitan charges GREC a quarterly expense charge which is based on net assets. The annual rate for this fee is 1.00%

MONY FINANCIAL SERVICES

1740 Broadway
New York, NY 10019
Contact: Wayne R. Dominguez, Sales Dir., Equity Real Estate, (212) 708-2950

Total real estate portfolio assets: $5 billion
Total pension fund real estate assets: $72 million (as of 12/31/86)
Pension fund real estate clients: 51
Asset breakdown: 55% office; 18% industrial; 27% retail
Participation offered: Open-end fund
Geographic diversification: National; 11% East, 51% South, 12% Midwest, 26% West
Minimum investment: $100,000
Return on investment: 10.8% 3 yr.; 12.4% 5 yr. Latest annual, 4.9%
Fee: 1% per year on the gross assets of the Fund, deducted quarterly

J. P. MORGAN INVESTMENT MANAGEMENT INC.

9 West 57th St.
New York, NY 10019
Contact: Timothy J. Heise, Managing Director, (212) 826-7330

Total real estate portfolio assets: $1.5 billion
Total pension fund real estate assets: $1 billion
Pension fund real estate clients: 133
Asset breakdown: 52% office, 10% industrial, 36% retail, 2% hotel
Participation offered: Open-end fund and separate accounts
Geographic diversification: 53% East, 25% South, 20% Midwest, 2% West
Minimum investment: Fund - $5 million; separate accounts - $50 million over a 2 year time period
Return on investment: 17.7% for 5 year period ending 3/31/87, latest annual 13.8% as of 3/31/87
Fee: Fund - 1.25% on market value

MORGUARD INVESTMENTS LTD.

1027 Yonge St.
Toronto, Ontario, Canada M4W 3E8
Contact: W. A. Houghton, Senior VP-Investments, (416) 967-0880

Total real estate portfolio assets: $1.3 billion
Total pension fund real estate assets: $1.3 billion
Pension fund real estate clients: 35 Canadian funds
Asset breakdown: By market value: 40% office, 40% industrial, 15% retail, 5% hotel and office (mixed use)
Participation offered: Managed consortia, closed end
Geographic diversification: Major urban centers across Canada (40% West, 60% East)
Minimum investment: Funds drawn on deal basis; sponsor fund should be min. $200 million total assets
Return on investment: Cumulative, 17.0% 1975 through first quarter 1987; latest annual, 13.2% (12 mos. moving average)
Fee: Origination fee/sales fee 1.5% asset cost; portfolio management fee 0.5% - 0.6% of cost annually depending on portfolio size

MUTUAL BENEFIT LIFE

570 Broad St.
Newark, NJ 07101
Contact: Michael K. Farrell, VP-Group Pension Marketing, (201) 481-8462

Total real estate portfolio assets: $99.8 million as of 12/31/86
Total pension fund real estate assets: $30.5 million as of 12/31/86
Pension fund real estate clients: 18
Asset breakdown: 50% office, 50% industrial
Participation offered: Open-end separate account
Geographic diversification: Current holdings located in Southeastern, Southwestern, Central and Western United States
Minimum investment: $20,000
Return on investment: Cumulative, 13.5% 5 yr. annualized return (1982-1986); Latest annual 2.71%
Fee: 0.25% of short-term assets plus 1.5% of long-term assets on an annual basis

NCNB NATIONAL BANK

T09-1
Charlotte, NC 28255
Contact: Mark S. Coltrin, VP, (704) 374-8405

Total real estate portfolio assets: $775 million
Total pension fund real estate assets: $575 million
Pension fund real estate clients: 469
Asset breakdown: 12% office, 2% residential, 25% land, 61% office/service
Participation offered: Open-end, closed-end and separate accounts
Geographic diversification: Southeastern U.S.
Minimum investment: $500,000
Return on investment: Cumulative, 14.2% for 5 years ending 12/31/86. Latest annual, 10.4%
Fee: Annual charge of 1.2% of the market value of real estate assets managed

NATIONAL PROPERTY ADVISORS CORP.

1401 W. Paces Ferry Rd., Suite D-110
Atlanta, GA 30327
Contact: Sallie E. Proctor, VP-Director of Marketing, (404) 237-2747

Total real estate portfolio assets: $261.9 million gross, $205.0 million net
Total pension fund real estate assets: $81.3 million gross, $55.9 million net
Pension fund real estate clients: 9
Asset breakdown: 28.6% office, 56% industrial, 8.1% retail, 7.3% land
Participation offered: Closed-end funds, separate accounts
Geographic diversification: Nationwide with emphasis on South and Midwest
Minimum investment: $2 million
Return on investment: Cumulative: NPP-I—9.6% for 5 yrs., 4.9% for 3 yrs., 1.1% for 2 yrs. NPP-II—8.5% for 2 yrs. Latest annual: NPP-I— -1.05%; NPP-II—8.43%.
Fee: 1.2% per year, deducted quarterly, on the market value of the real estate assets before subtracting liabilities; 0.25% per year deducted quarterly on cash and cash investments excluding any shares of Sentinel Cash Management Fund

PAINE WEBBER PROPERTIES

One Northbridge Center
West Palm Beach, FL 33401
Contact: James Snyder, Sr. VP, (305) 655-5244

Total real estate portfolio assets: $1.7 billion
Total pension fund real estate assets: $284.8 million
Pension fund real estate clients: 47,649
Asset breakdown: 21.43% office, 32.14% retail, 7.14% hotel, 35.71% residential, 3.57% research & development
Participation offered: Closed-end
Geographic diversification: AK, CA, FL, GA, IL, KS, KY, MA, MO, NB, NC, TN, TX, VA, WA
Minimum investment: $2,000 IRA
Return on investment: Varies—7 - 9%
Fee: Varies

THE PALMIERI COMPANY

2021 K St., NW, Suite 700
Washington, DC 20006
Contact: John A. Koskinen, President, (202) 223-8690

Total real estate portfolio assets: $1.7 billion
Total pension fund real estate assets: $200 million
Pension fund real estate clients: 6
Asset breakdown: 30% office, 5% retail, 20% hotel, 10% residential, 20% land, 15% retirement community
Participation offered: Closed-end funds
Geographic diversification: Continental U.S. and Canada
Minimum investment: $1 million
Return on investment: Confidential
Fee: Base fee of 0.75% to 1.25% plus incentives

THE PECKHAM BOSTON COMPANY

Four Longfellow Place, Suite 3305
Boston, MA 02114
Contact: John M. Peckham III, President, (617) 523-4440

Total real estate portfolio assets: $20 million
Total pension fund real estate assets: $20 million
Pension fund real estate clients: 4
Asset breakdown: 60% office, 20% industrial, 20% retail
Participation offered: Separate accounts
Geographic diversification: National
Minimum investment: $1 million
Return on investment: Varies
Fee: Varies

PENREAL ADVISORS LTD.

600 - 1100 Melville St.
Vancouver, B.C., Canada V6E 4A6
Contact: Garth Carefoot, VP, (604) 685-8351

Total real estate portfolio assets: $168 million
Total pension fund real estate assets: $168 million
Pension fund real estate clients: 57
Asset breakdown: 41% office, 32% industrial, 27% retail
Participation offered: Two closed-end funds
Geographic diversification: 3% Montreal, 41% Toronto, 21% Calgary & 35% Vancouver
Minimum investment: $500,000
Return on investment: Cumulative, 14.7%, Oct., 1983 to December 31, 1986. Latest annual, 14.8% January 1, 1986 to December 31, 1986
Fee: Portfolio management fee of 0.5% per annum, acquisition/disposition fee at 1.0% - 1.5%

THE PHOENIX
One American Row
Hartford, CT 06115
Contact: Thomas P. Hogan, National Sales Manager, (203) 275-5348

Total real estate portfolio assets: $1.88 billion
Total pension fund real estate assets: $215 million
Pension fund real estate clients: 151
Asset breakdown: 41% office, 21% industrial, 13% retail. 25% residential
Participation offered: Open-end (RESA). Closed-end Real Estate Account—CEREA (1987 offering)
Geographic diversification: 39% West, 17% Midwest, 37% South, 7% East
Minimum investment: $50,000
Return on investment: 14.64% (net, 5 years). Latest annual, 11.44%
Fee: RESA annual fee on the net asset value of the fund: 1.25%—first $2 million; 1.00% thereafter

PMREALTY ADVISORS, INC.
800 Newport Center Dr., Suite 300
Newport Beach, CA 92660
Contact: Pete Hammer, Managing Director, (714) 721-5005

Total real estate portfolio assets: $488.3 million
Total pension fund real estate assets: $162.2 million
Pension fund real estate clients: 15
Asset breakdown: 29% office, 37% industrial/R&D, 34% retail
Participation offered: Closed-end equity real estate funds and individually managed portfolios
Geographic diversification: Located in the high-growth corridors of major metropolitan areas across the U.S.
Minimum investment: $1 million
Return on investment: Objective: 9 - 9½% initial cash on cash; real return 6% - 8%; Income—9.3%
Fee: 1.25% of gross assets based on purchase price, first two years; 1.25% of gross assets based on appraisal after year two

T. ROWE PRICE REALTY ADVISERS, INC.
444 S. Flower St., Suite 2150
Los Angeles, CA 90071
Contact: Reid G. Samuelson, Pres., (213) 624-2996

Total real estate portfolio assets: $167.2 million
Total pension fund real estate assets: 38.2%
Pension fund real estate clients: 8
Asset breakdown: 25% office, 75% industrial
Participation offered: Closed-end funds
Geographic diversification: 9% East, 45.5% South, 44.5% West
Minimum investment: $1 million
Return on investment: Cumulative, 9%
Fee: Depends on account

THE PRINCIPAL FINANCIAL GROUP
711 High St.
Des Moines, IA 50309
Contact: Dan J. Fitzgerrell, Director-Pension Operations, (515) 247-6791

Total real estate portfolio assets: $8 billion
Total pension fund real estate assets: $5.3 billion of commercial mortgages, $64 million in our ownership RESA
Pension fund real estate clients: 1,005
Asset breakdown: 26% office, 49% industrial, 25% retail
Participation offered: Open-end ownership real estate separate account
Geographic diversification: 40% Southwest, 30% Southeast, 15% Northwest, 15% Midwest
Minimum investment: No minimum
Return on investment: Cumulative 1/82 through 1986, 58%; latest annual, 7.04%
Fee: An annual investment management fee of 0.96% plus a contract fee which varies according to the total assets we hold for a plan sponsor

PROPERTY CAPITAL ASSOCIATES
200 Clarendon St.
Boston, MA 02116
Contact: Thomas J. Mizo, VP, (617) 536-8600

Total real estate portfolio assets: $625 million
Total pension fund real estate assets: Over $625 million
Pension fund real estate clients: Approximately 45
Asset breakdown: 25% office, 7% industrial, 17% retail, 31% hotel, 20% residential
Participation offered: Publicly-traded REITS, closed-end funds, separate accounts
Geographic diversification: 20% East, 20% West, 38% Central, 22% South
Minimum investment: $1 million
Return on investment: Cumulative (1977-86), 20%; latest annual, 19% overall
Fee: Performance-based fee

THE PRUDENTIAL ASSET MANAGEMENT COMPANY
19 Prudential Plaza
Newark, NJ 07101
Contact: Robert Bowen, Sr. VP, (201) 877-9298

Total real estate portfolio assets: $31.8 billion
Total pension fund real estate assets: $12 billion
Pension fund real estate clients: 348
Asset breakdown: 50% office, 16% industrial, 18% retail, 9% hotel, 5% residential, 1% land, 1% timber/agricultural
Participation offered: The Prudential Realty Group through the Prudential Asset Management Company offers a wide variety of real estate funds. PRISA and PRISA II are open-end real estate equity funds. PRACE-I and PRACE-II are closed-end equity accounts. PRIMOR and MORISA are participating mortgage accounts, PRIMOR being invested only in properties constructed with union labor. Our newest product is the Union Mortgage Account (UMA). UMA is being marketed to Labor-Management Trusts. The fund will invest in construction, forward commitment and fixed rate loans on properties built or improved with union labor
Geographic diversification: Prudential's tax-exempt funds invest in properties and have investments in mortgage loans on properties throughout the United States
Minimum investment: The minimum investment required varies with the accounts. For PRISA there is no minimum investment requirement
Return on investment: Cumulative: PRISA net cumulative rate of return since inception (7/31;70), 452.7%; PRISA net annualized rate of return since inception, 11.0%. Latest annual: PRISA net rate of return, year 7.0%
Fee: PRISA 1.15% - first $50 million, 1.00% - next $100 million, 0.80% - thereafter; minimum $25,000 annual fee after the first full year of participation

PSI INSTITUTIONAL REALTY
A DIVISION OF PUBLIC STORAGE, INC.
1015 Grandview Ave.
Glendale, CA 91201
Contact: Nori Gerardo, Sr. VP, (818) 244-8080

Total real estate portfolio assets: $2.0 billion
Total pension fund real estate assets: $450 million
Pension fund real estate clients: 100
Asset breakdown: 100% industrial
Participation offered: Closed-end funds and separate accounts
Geographic diversification: Widely diversified nationwide
Minimum investment: $250,000
Return on investment: Available upon request on a specific investment basis
Fee: Public Storage receives 8% of cash from operations until investors receive amounts equal to their initial capital contribution. Thereafter Public Storage receives 25%. Public Storage receives 25% of proceeds of sales after investors have received amounts from all sources equal to their original contribution

T. W. RICHARDSON & CO., INC.
6603 Bay St.
Emeryville, CA 94608
Contact: Thomas W. Richardson, President, (415) 652-0318

Total real estate portfolio assets: $5.1 million
Total pension fund real estate assets: $5.1 million
Pension fund real estate clients: 4
Asset breakdown: 40% office, 40% industrial, 20% land
Participation offered: Separate accounts, partnerships
Geographic diversification: California, Georgia, Texas
Minimum investment: $1 million
Return on investment: Cumulative, 17.9% (1982-86 5 years); Latest annual, 6.0%
Fee: 1.25% first year, 1% thereafter, incentive fee in all accounts

ROSEN ASSOCIATES
333 Jericho Turnpike
Jericho, NY 11753
Contact: Robert A. Rosen, President, (516) 822-5350

Total real estate portfolio assets: $60 million
Total pension fund real estate assets: $25 million
Pension fund real estate clients: 2
Asset breakdown: 100% retail (shopping centers)
Participation offered: Separate accounts
Geographic diversification: Nationally
Minimum investment: $2.5 million
Return on investment: 7%
Fee: Negotiable

THE RREEF FUNDS
650 California St., 18th Fl.
San Francisco, CA 94708
Contact: Paul Sack, Principal, (415) 781-3300

Total real estate portfolio assets: $3.1 billion
Total pension fund real estate assets: $3.1 billion
Pension fund real estate clients: 86
Asset breakdown: 43.2% office, 25.7% industrial, 31.1% retail
Participation offered: Closed-end funds, separate accounts
Geographic diversification: Throughout the United States

Minimum investment: $1 million—regional & apartment funds; $15 million—USA Fund
Return on investment: Not available
Fee: 1.2% of the net asset value, annually

FRANK RUSSELL TRUST COMPANY
P.O. Box 1454
Tacoma, WA 98401-1454
Contact: Paul R. Kaltinick, President, (206) 572-2282

Total real estate portfolio assets: $182.5 million
Total pension fund real estate assets: $182.5 million
Pension fund real estate clients: 52
Asset breakdown: 43.4% office, 25.4% industrial, 20.2% retail, 3.8% hotel, 2.5% residential, 4.7% land
Participation offered: Commingled, open-end, real estate equity fund
Geographic diversification: 43.6% West, 28.1% East, 19.7% South, 8.6% Midwest. 43.6% West
Minimum investment: $5 million
Return on investment: Cumulative, 10.8% 4/1/84 - 12/31/86. Latest annual, 8.9%
Fee: (Fee charged to Fund) 1.5% on first $10 million; 1.35% on the excess

SCHRODER REAL ESTATE ASSOCIATES
437 Madison Ave.
New York, NY 10022
Contact: John E. Emmanuel, Sr. VP, (212) 486-9800

Total real estate portfolio assets: $1 billion
Total pension fund real estate assets: $674 million
Pension fund real estate clients: 71
Asset breakdown: 56% office, 44% retail
Participation offered: Closed-end funds and separate accounts
Geographic diversification: 58% East, 21% South, 12% West, 9% Midwest
Minimum investment: $2 million
Return on investment: Cumulative, 17.6% (7 yrs. 1980 - 1986); latest annual, 16.67%
Fee: Closed end funds—1.25% of gross real estate assets; separate accounts—negotiable

SCUDDER REALTY ADVISORS, INC.
333 S. Hope St., 37th Fl.
Los Angeles, CA 90071
Contact: Christopher B. "Kip" Davis, Sr. VP, (213) 628-1144

Total real estate portfolio assets: $480 million
Total pension fund real estate assets: $455 million
Pension fund real estate clients: 8
Asset breakdown: 35% office, 25% industrial, 30% retail, 10% residential
Participation offered: Separate account advisors
Geographic diversification: Country-wide with a concentration in the Western states
Minimum investment: Not available
Return on investment: Not available
Fee: 0.20% to 0.50% basis point asset management annually, depending on whether mortgage, hybrid or equity; based on original investment or unamortized balance. 1½% acquisition fee

SECURITY CAPITAL REAL ESTATE CORPORATION
1290 Avenue of the Americas
New York, NY 10104

Contact: Lewis W. Kresch, First VP, (212) 408-2911

Total real estate portfolio assets: $1.11 billion
Total pension fund real estate assets: $898 million
Pension fund real estate clients: 160
Asset breakdown: 8% office, 2% industrial, 8% retail, 82% residential
Participation offered: One open-end commingled fund and one closed-end commingled fund
Geographic diversification: National
Minimum investment: $250,000 (open-end); $1 million (closed-end)
Return on investment: Cumulative, 15.5% (10/1/76 9/30/86). Latest annual, 6.5% (year ended 9/30/86)
Fee: Varies by fund

THE STANDARD LIFE ASSURANCE COMPANY
45 Sheppard Avenue East, Suite 940
Willowdale, Ontario, Canada M2N 5W9
Contact: E. D. Quigg, Manager, Real Estate Department, (416) 221-5663

Total real estate portfolio assets: $615 million
Total pension fund real estate assets: $71 million
Pension fund real estate clients: 120
Asset breakdown: 44% office, 26% industrial, 30% retail
Participation offered: Units in Pooled Real Estate Fund or undivided share in property
Geographic diversification: Canada only
Minimum investment: No minimum investment
Return on investment: Varies
Fee: Varies with size of fund managed

STATE STREET BANK & TRUST CO.
225 Franklin St.
Boston, MA 02110
Contact: Peter Braun, VP, (617) 654-3953

Total real estate portfolio assets: $361.9 million
Total pension fund real estate assets: $361.9 million
Pension fund real estate clients: 22
Asset breakdown: 24% office, 35% industrial, 41% retail
Participation offered: Units of closed-end commingled funds, pension assets only
Geographic diversification: 9% East, 19% Midwest, 27% South, 45% West
Minimum investment: $5 million
Return on investment: 82.1% Fund I (Sept. 82 - March 87); 37.3% Fund II (Jan. 84 - March 87); 8.8% Fund III (Sept. 85 - March 87), 3.5% Fund IV (Sept. 86 - March 87)
Fee: 1.00% of net asset value of fund

SUHRCO REAL ESTATE ADVISORS, INC.
401 Parkplace, Suite 501
Kirkland, WA 98033
Contact: Edwin C. Suhrbier, President, (206) 828-4464

Total real estate portfolio assets: $100 million
Total pension fund real estate assets: $95 million
Pension fund real estate clients: 3
Asset breakdown: 30% office, 70% retail
Participation offered: Real estate asset management; discretionary and non-discretionary accounts
Geographic diversification: Pacific Northwest
Minimum investment: Not provided
Return on investment: Not provided
Fee: Negotiated on a client-by-client basis

TCW Realty Advisors
is pleased to announce
the formation of

TCW LAND FUND I

with funding of

$175,000,000

TCW Realty Advisors
is a joint venture of

Trust Company of the West
and
Westmark Real Estate Investment Services

Trust Company of the West

Los Angeles

SUN LIFE OF CANADA INVESTMENT MANAGEMENT
200 University Ave.
Toronto, Ontario, Canada M5H 3C7
Contact: Peter A. Salloum, VP, (416) 595-7809

Total real estate portfolio assets: $1.95 billion
Total pension fund real estate assets: $269.7 million
Pension fund real estate clients: 69
Asset breakdown: 33% office, 42.7% industrial, 24.3% retail
Participation offered: Open end pooled fund
Geographic diversification: 26% British Columbia, 8% Alberta, 1% Saskatchewan, 1.5% Manitoba, 52.1% Ontario, 8.2% Quebec, 3.2% Nova Scotia
Minimum investment: $10,000
Return on investment: Cumulative—(as of 3/31/87)—1 yr. 15.54%, 2 yr. 15.47%, 3 yr. 14.31%, 4 yr. 14.28%, 5 yr. 13.52%. Latest annual (as of 3/31/87)—15.54%
Fee: First $2 million, 0.60%; next $3 million, 0.45%; next $10 million, 0.30%; over $15 million, 0.15%. A service fee of 0.96% is levied on the fund.

TCW REALTY ADVISORS
400 South Hope St., Suite 600
Los Angeles, CA 90071-2899
Contact: Bruce L. Ludwig, Sr. Partner, (213) 683-4200

Total real estate portfolio assets: $1.09 billion
Total pension fund real estate assets: $1.09 billion
Pension fund real estate clients: 73
Asset breakdown: 39% office, 49% industrial, 12% retail
Participation offered: Closed-end commingled funds and separate accounts
Geographic diversification: Nationwide in targeted metropolitan centers indentified by in-house research team

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Minimum investment: $1 million - commingled funds, $50 million - separate accounts
Return on investment: Cumulative: composite funds 11.2% (1/83 - 12/86); composite separate accounts 10.3% (6/83 - 12/86). Latest annual: composite funds - 11.0%, composite separate accounts - 10.0%
Fee: Year 1: 1.2% per annum based on contributed capital. Thereafter: 1.2% per annum based on the lower of cost or market value of real estate assets. Incentive: 10% of excess after investor receives 10% cumulative return.

THIRD NATIONAL BANK
424 Church St.
Nashville, TN 37244
Contact: Steve Iler, VP, (615) 748-5479

Total real estate portfolio assets: $75 million
Total pension fund real estate assets: $29 million (net)
Pension fund real estate clients: 110
Asset breakdown: 24.61% office, 27.12% industrial, 40.79% retail, 1.49% land, 5.98% medical offices
Participation offered: Open-end fund
Geographic diversification: Southeastern United States (KY, TN, NC, SC, GA, FL)
Minimum investment: $1800 per unit
Return on investment: Cumulative, 48.26% last five years (before fees). Latest annual, 10.3% as of March 31, 1987 (before fees)
Fee: 1.25% net book value real estate; 0.25% cash assets

THE TRAVELERS COMPANIES
7MS One Tower Square
Hartford, CT 06183-6030
Contact: Christopher M. Pope, Director, (203) 277-6384

Total real estate portfolio assets: $17.2 billion
Total pension fund real estate assets: $11.6 billion
Pension fund real estate clients: 233
Asset breakdown: 52.6% office, 10.6% industrial, 9.4% retail, 3.8% hotel, 6.4% timber, 11.1% apartments, 6.1% agriculture
Participation offered: Open-end and closed-end separate accounts — equity, mortgages, balanced (equity and mortgages), agricultural, timberland and individually managed separate accounts.
Geographic diversification: 13.9% East, 30.2% South, 28.2% Midwest, 27.7% West
Minimum investment: Separate account "R" - equity, debt, balanced: $100,000. Separate account "T": $1 million. Individually managed separate account: $50 million
Return on investment: Last 12 months as of 4/30/87, Separate Account "R"-Equity: 6.95%. Separate Account "R"-Debt: 3.58%. Separate Account "R"-Balanced: 5.70%.
Fee: Separate Account "R"-Equity, Debt, Balanced: 1.00% annual fee. Separate Account "T": 1.25% annual fee. Individually managed separate account: Negotiable

UNITED TRUST FUND
4770 Biscayne Blvd.
Miami, FL 33137
Contact: James Nolan, Exec. VP, (305) 576-7711

Total real estate portfolio assets: $180 million
Total pension fund real estate assets: Not available
Pension fund real estate clients: 8
Asset breakdown: 40% office, 30% industrial, 30% retail
Participation offered: Separate accounts
Geographic diversification: Continental U.S.
Minimum investment: $5 million
Return on investment: Not available
Fee: 1.0% net income, plus advisory fee based on each transaction

UNITED VIRGINIA BANK
Trust Real Estate
P.O. Box 26665
Richmond, VA 23261
Contact: Ronald E. Martin, Asst. VP, (804) 782-7259

Total real estate portfolio assets: $200 million
Total pension fund real estate assets: $26 million
Pension fund real estate clients: 180
Asset breakdown: 23% office, 9% industrial, 67% retail
Participation offered: Open-end commingled fund and separate accounts
Geographic diversification: Southeast
Minimum investment: $1,000
Return on investment: Cumulative, 35% last 36 months. Latest annual, 9.05% as of 3/31/87
Fee: 0.375% of cash assets, 1% of real estate assets

VICAP, INC.
331 South Rio Grande St., Suite F
Salt Lake City, UT 84101
Contact: Paul D. Hanseen, President, (801) 363-8153

Total real estate portfolio assets: $500 million
Total pension fund real estate assets: Not provided
Pension fund real estate clients: 38
Asset breakdown: Not provided
Participation offered: Not provided
Geographic diversification: Not provided
Minimum investment: Not provided
Return on investment: Not provided
Fee: Not provided

WELLINGTON REAL ESTATE
28 State St.
Boston, MA 02109
Contact: James L. Walters, Managing Principal, (617) 227-9500

Total real estate portfolio assets: $100 million commitment
Total pension fund real estate assets: $100 million commitment
Pension fund real estate clients: One separate account
Asset breakdown: 100% multi-family residential
Participation offered: Separate account management and a closed-end residential fund for investment
Geographic diversification: Emphasis east of the Mississippi
Minimum investment: Separate account, $50 million; closed-end fund, $10 million
Return on investment: New fund—all returns are projected
Fee: Separate account: 0.30% annually on committed capital for first two years, 0.30% annually on appraised value thereafter. closed-end fund: 0.50% annually on committed capital for first two years; 0.50% annually on appraised value thereafter; 2% of gross sales proceeds provided investors have received a 12% compounded rate of return over life of fund (10 years)